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CATALOG

Oklahoma Agricultural and Mechanical College

1909
1910

STILLWATER, OKLAHOMA

A. AND M. COLLEGE PRINTING DEPARTMENT

OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE

C
OKA
1908-09

EIGHTEENTH

ANNUAL CATALOG

1908-1909

WITH ANNOUNCEMENTS FOR 1909-1910

STILLWATER, OKLAHOMA

A physician and surgeon employed by the College will give his services to students of the College without extra charge during the nine months' term. This provision will insure careful and systematic attention to the health of all students.

OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE

C
OKA
1908

EIGHTEENTH
ANNUAL CATALOG
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STILLWATER, OKLAHOMA

Bulletin of the Oklahoma Agricultural and Mechanical College; Vol. VII, No. 1.
Entered March 9, 1903, as second class matter under Act of Congress of July 16, 1894.

COLLEGE CALENDAR

1909

September 7, Tuesday—The Fall Term Opens.
October 12, Tuesday—The Short Course in Agricultural and Domestic Economy Opens.
November 25, Thursday—Thanksgiving Day, a holiday.
December 22, Wednesday—The Fall Term Closes.

1910

January 4, Tuesday—The Winter Term Opens.
January 10, Monday—The Butter Makers' Course Opens.
January 15, Saturday—The Butter Makers' Course Closes.
January 17, Monday—The Winter Short Course for Farmers Opens.
January 22, Saturday—The Winter Short Course for Farmers Closes.
February 22, Tuesday—Washington's Birthday, a holiday.
March 11, Friday—The Winter Term Closes.
March 11, Friday—The Short Course in Agriculture and Domestic Economy Closes, Graduation Day.
March 15, Tuesday—The Spring Term Opens.
April 22, Friday—The Annual Field Meet and the Annual Oratorical Contest.
May 7, Saturday—The Second Annual Northeastern Oklahoma Interscholastic Track and Field Meet.
May 28, Saturday—The Annual Debate between the Literary Societies.
May 29—Baccalaureate Sunday.
May 30, Monday—The Annual Senior Class Play.
May 31, Tuesday—Commencement Day, the Spring Term Closes.
June 7, Tuesday—The Summer School, (including the Summer Normal and the Summer Session of the College) Opens.
July 15, Friday—The Summer School Closes.
July 18, Monday—The Cotton Grading School Opens.
August 6, Saturday—The Cotton Grading School Closes.
August 9, Tuesday—Annual Meeting of State Farmers' Institutes and the State Board of Agriculture.

The Faculty reserves the right, without further notice, to modify any announcement made in this catalog, if circumstances render such change necessary, and in any event they will be bound by it for only the year following the date of publication.

STATE BOARD OF AGRICULTURE

The Board of Regents

Hon. J. P. Connors, *President*	Canadian
Hon. J. C. Elliott, *Vice President*	Paul's Valley
Hon. Ewers White, *Treasurer*	McLoud
Hon. Frank Ikard	Chickasha
Hon. G. T. Bryan	Perry
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Hon. A. C. Cobb	Wagoner
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Professor of Zoology and Veterinary Science

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Professor of Agronomy

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Professor of Dairying

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Professor of English

BOYD A. WISE, PH. D.
Professor of German and Latin

B. C. PITTUCK, B. S.
Dean of District Agricultural Schools

IRA F. FRAVEL
1st Lieut. 24th Infantry, U. S. A.
Commandant of Cadets

W. A. LINKLATER, B. S. A.
Professor of Animal Husbandry

W. A. ETHERTON
Professor of Architectural Engineering

JOHN A. CRAIG, B. S. A.
Director of Experiment Station

T. M. JEFFORDS
Professor of Agriculture for Schools

HARDEE CHAMBLISS, M. S., PH. D.
Professor of Chemistry

CARL GUNDERSON, PH. D.
Professor of Mathematics

C. E. SANBORN, M. A.
Professor of Entomology

REBECCA ACHESON
Professor of Domestic Art

Professor of Pedagogy

LEROY J. BARTON
Principal Sub-Freshman Department

I. ZACKHEIM
Royal Conservatory, Konigsberg, and Imperial Conservatory, Warsaw,
Director of Music

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Principal Business Department

W. E. SCHREIBER, A. B.
Director in Physical Training

H. P. MILLER, M. S., D. V. M.
Principal of School of Agriculture

E. E. KING, B. S., C. E.
Associate Professor of Civil Engineering

ARLINGTON P. LITTLE, B. S., E. E.
Associate Professor of Electrical Engineering

CHARLES E. SCHOENE, B. M. E.
Associate Professor of Mechanical Engineering

.....

Associate Professor of Animal Husbandry

INSTRUCTORS AND OTHER OFFICERS

HOWARD G. SELDOMRIDGE
Graduate Curry School of Expression
Instructor in Public Speaking and Assistant in English

W. R. WRIGHT, B. S.
Assistant in Bacteriology

W. L. BURLISON, M. S.
Assistant Professor of Agronomy

W. P. WEBBER, A. M.
Assistant Professor Mathematics

CORA A. MILTIMORE, A. B.
Librarian

MARTHA B. McKINLEY
Assistant Domestic Science

ED McCARRELL
Assistant Sub-Freshman Department

*CORNELIUS BEATTY, A. B.
Chemist Experiment Station

E. J. WESTBROOK
Superintendent Printing Department

.....

Assistant Professor of Chemistry

GEORGE WILSON
Assistant in Mathematics

J. A. RATCLIFF, B. S.
Assistant in Agronomy

A. L. LOVETT, B. S.
Assistant in Entomology

HARRIETT DAY
Instructor Drawing and Art Work

R. O. BAIRD, B. S.
Assistant Chemist Experiment Station

L. M. MONTGOMERY, B. S.
Assistant in Horticulture and Botany

*Resigned June 1, 1909.

MADGE BOOKS SANDERS
New England Conservatory of Music
Assistant in Music

HAZEL McILVAIN
Assistant Librarian

MONROE J. OTEY, B. S.
Financial Secretary

Assistant in English

EMMA J. ROSS
Posse Gymnasium and Emerson School of Oratory
Director of Physical Training for Women

T. A. ROBINSON
Instructor in Cotton Grading

CHARLES EVANS
Principal of the Summer Normal

MISS MAUDE BONDURANT
Instructor Model School

MRS. J. F. LAWRENCE
Assistant in Piano

R. E. ANDERSON, B. S.
Registrar

PEARL WIAR, B. S.
Assistant Domestic Economy

CHARLES W. CRAWFORD, B. S.
Assistant in Station Laboratory

ORPHA CATON, B. S.
Assistant in Domestic Science

H. A. IDE
Leader of Band

LETHE MORROW, B. S.
Station Clerk

ALBERT SIDNEY LEE
Assistant Business Department

EDWIN GALLAGHER, B. S.
Assistant Physical Director

E. E. BREWER
Foreman Shops

W. W. EVANS, B. S.
Superintendent of Farm

S. E. ANDREWS, LL. B.
Secretary to the President

Oklahoma Agricultural and Mechanical College

(The College after 19 years of development consists of forty-five professors and assistants, a student body of 1352 attending the past year, a group of eight brick and stone buildings and three others under construction, a science equipment costing $125,000, and 1000 acres of land)

1. Students in Attendance on Courses of Study in—

(1352 students 1908-9)

- AGRICULTURE
- ENGINEERING
- DOMESTIC ARTS AND SCIENCE
- SCIENCE AND LITERATURE
- TEACHERS' NORMAL
- BUSINESS TRAINING
- SHORT COURSE FOR
  - FARMERS
  - DAIRYMEN
  - COTTON GRADERS
  - TEACHERS

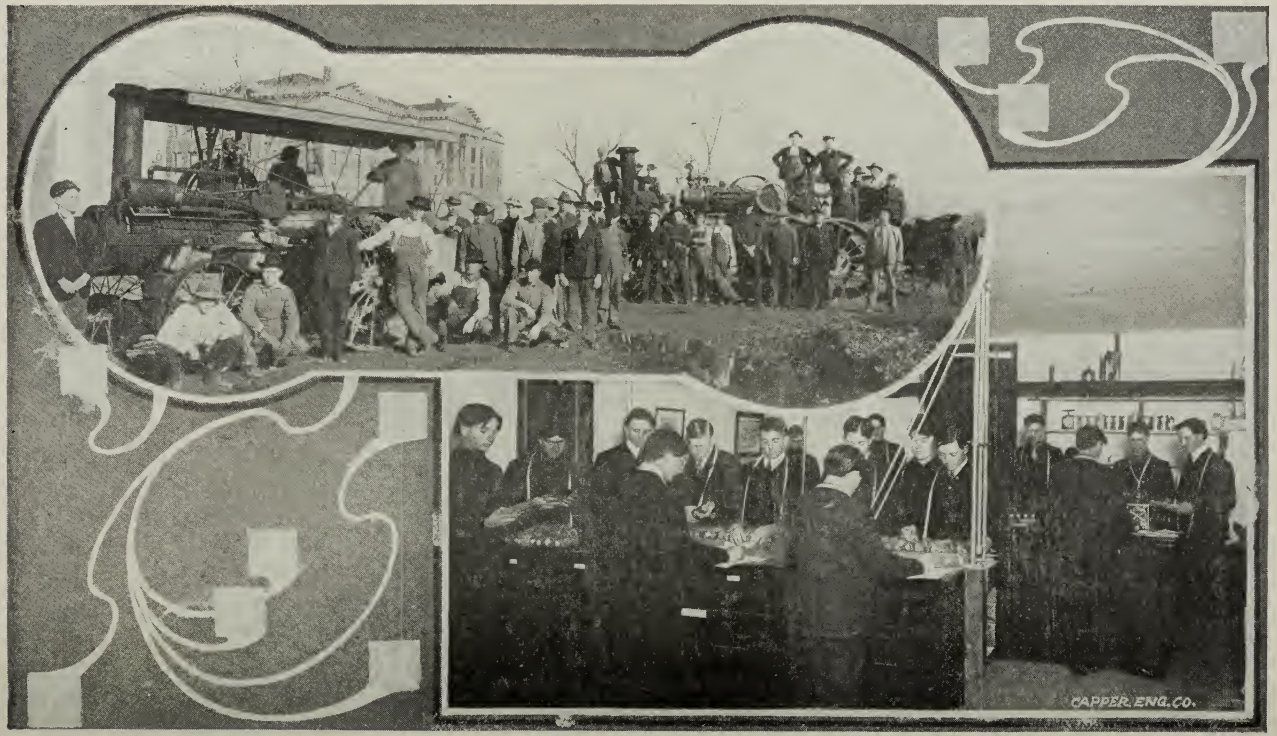
2. The OUTSIDE Work for People of the State by—

(35,000 citizens receive reports and 5000 teachers addressed by lecturers)

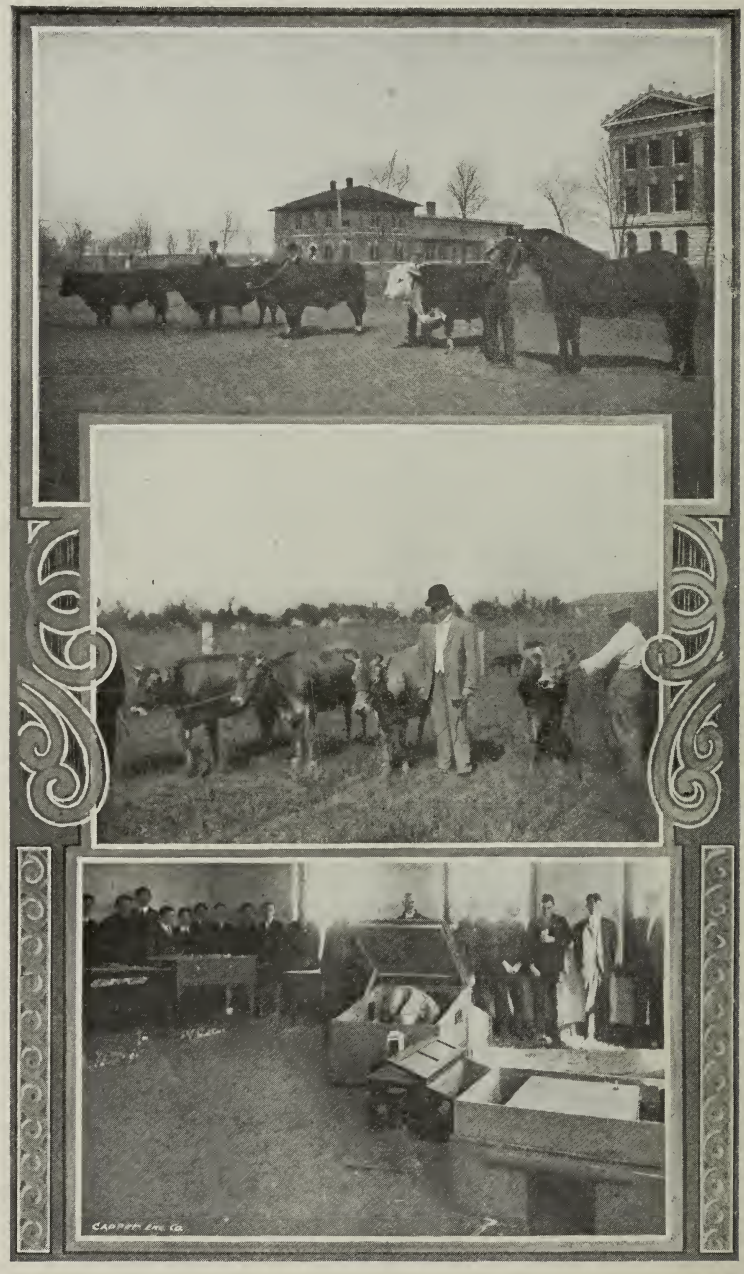
- Agricultural Experiment Station tests and free publications.
- Scientific research in behalf of Agriculture, and publishing results.
- Lectures at Farmers' Institutes and other meetings.
- Lectures at Teachers' Normals and Institutes, and publishing special literature.
- Organizing Boys' and Girls' Clubs at home for the study of agriculture and related subjects.

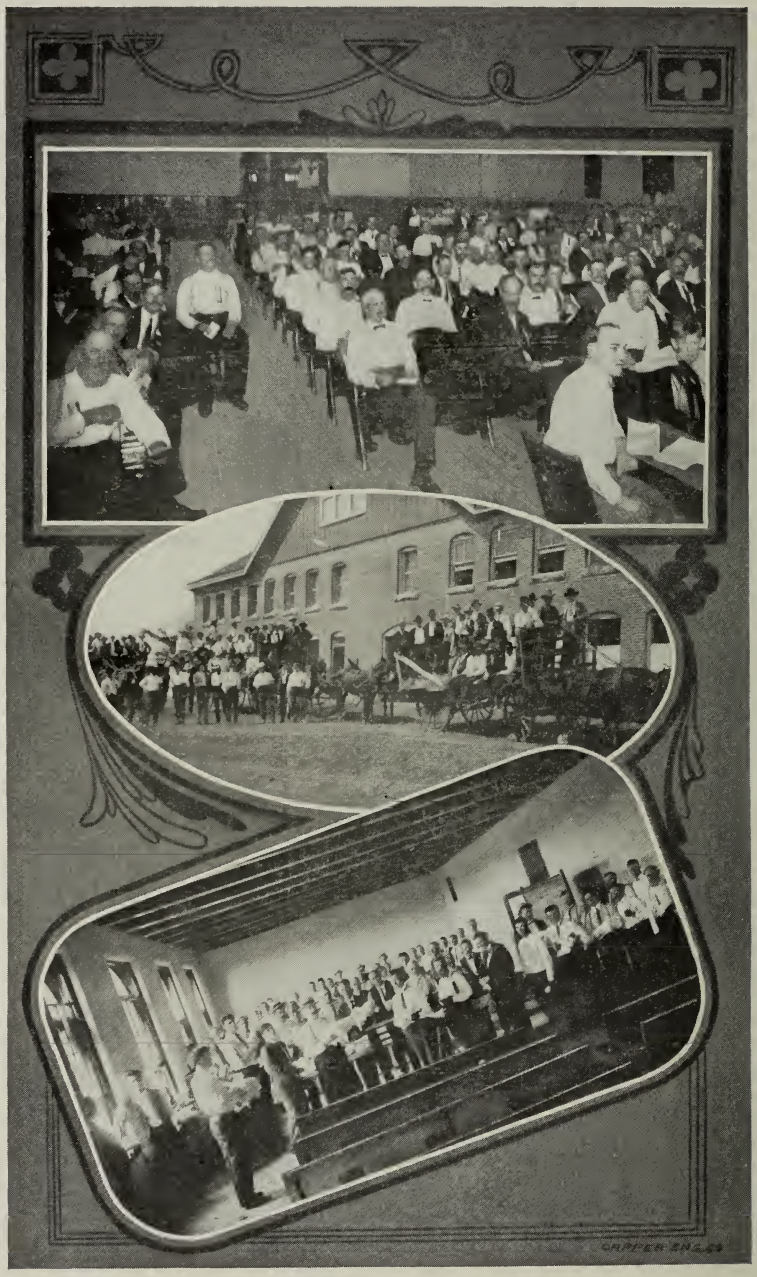
THE NEW STATE IS OUR PARISH

AGRICULTURAL BUILDING (MORRILL HALL)



WORKING WITH TRACTION ENGINE; SELECTING SEED CORN; JUDGING SEED CORN



PURE BRED MALES; A JERSEY HERD; WORK WITH INCUBATORS

ANNUAL MEETING FARMERS' STATE INSTITUTE; OUT TO SEE THE FARM; CLASS IN COTTON GRADING

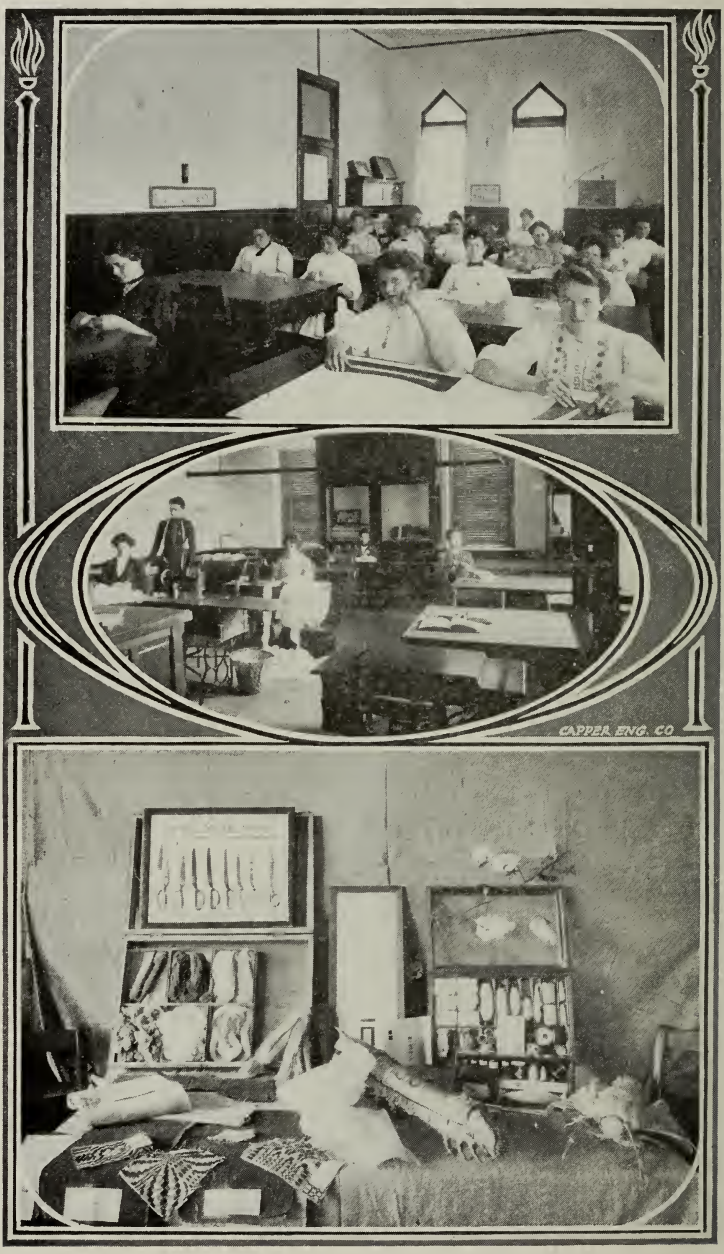
VALUE OF PURE BRED STOCK SHOWN BY BUTCHER'S TEST—WINTER'S SHORT COURSE

DRAWING ROOM—ENGINEERING DEPARTMENT; A GROUP OF FORGES; ELECTRICAL ENGINEERING SHOPS

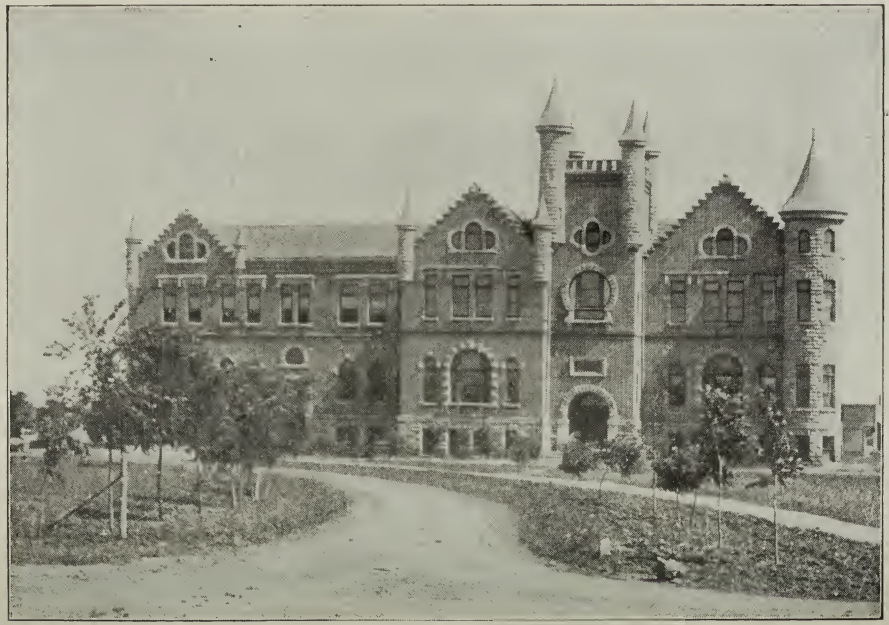
A RUN OF METAL IN FOUNDRY; THE CARPENTER SHOP; THE MACHINE SHOP

Woman's Building Containing Special Class Rooms for Domestic Science and Arts, Girls Gymnasium, Dining Hall and Living Rooms

CLASS IN DOMESTIC SCIENCE KITCHEN; LESSONS IN SEWING, DRAFTING AND CUTTING



SEAMING AND FITTING; HISTORY OF MATERIALS



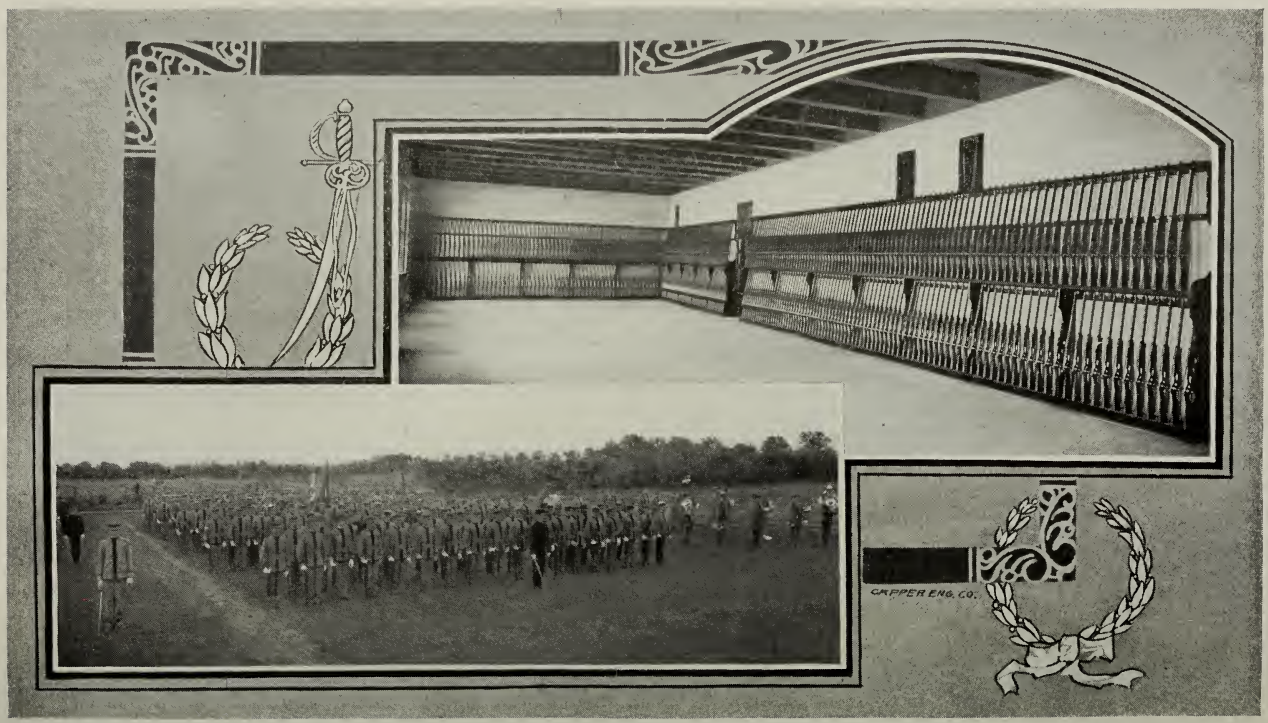
Library Building Containing the Library, Department of Zoology and Veterinary Science, Department of Music, and Assembly Hall

JUNIOR QUANTITATIVE LABORATORY; SOPHOMORE QUALITATIVE LAB ORATORY

PHYSICAL EDUCATION IN SUMMER NORMAL SCHOOL; TEACHERS ATTEND BARBECUE; TEACHERS SEE FARM

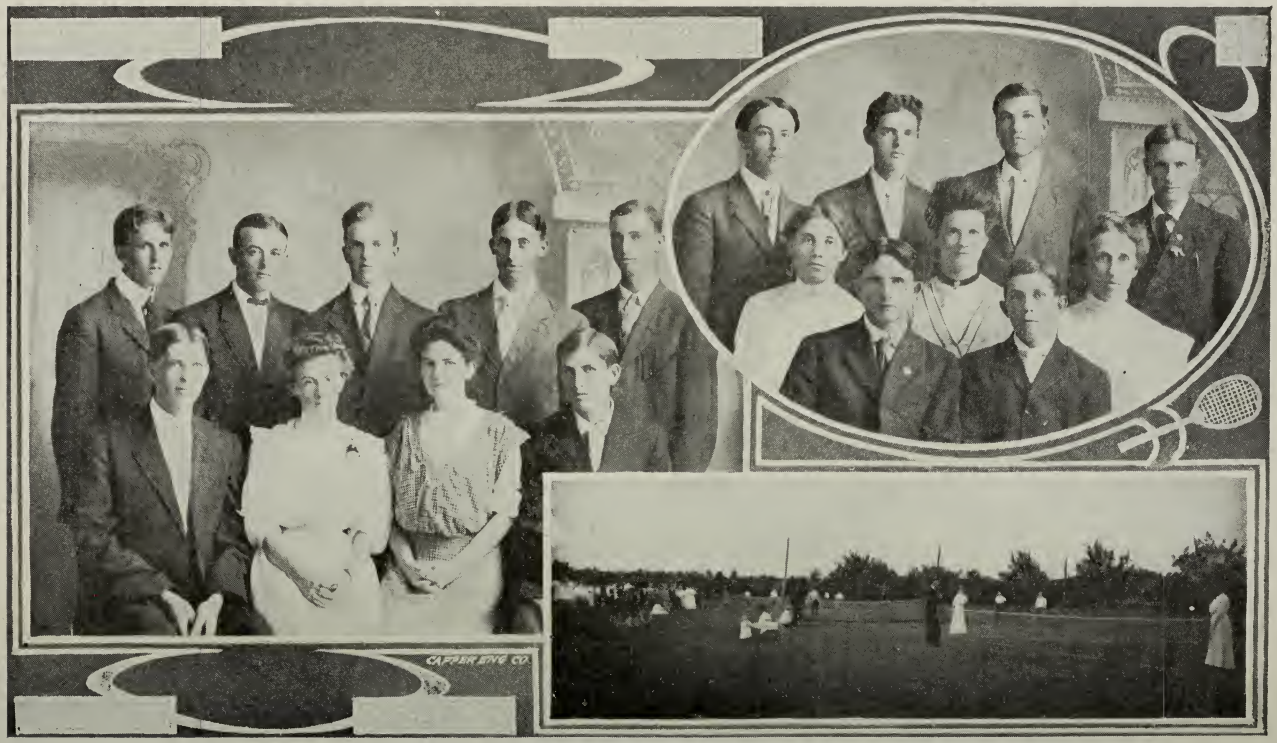
MANUAL TRAINING CLASS SUMMER NORMAL SCHOOL—BASKETRY

COMMANDANT AND COMMISSIONED OFFICERS OF BATTALION—1908-09



BATTALION AT REVIEW; THE ARMORY

MILITARY BAND; CHORAL CLUB



OFFICERS OMEGA SOCIETY; OFFICERS PHILOMATHEAN SOCIETY; THE TENNIS COURTS

STUDENT OFFICERS, ATHLETIC ASSOCIATION; "ON YOUR MARKS"

AFTER CHAPEL EXERCISES

THE OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

The State Agricultural and Mechanical College as now organized and operated is a State and Federal institution of higher and broader learning offering industrial, scientific and liberal education to white persons 14 years of age and over. The College also conducts extensive investigations and carries forward research work to establish new scientific truths of value to the people of Oklahoma.

The College was organized in 1891 and after 18 years of sturdy effort now consists of 45 professors and instructors, 1352 students attending last year, 8 large brick and stone buildings, (and two others in course of construction) an equipment valued at $160,000.00 and 1000 acres of land.

Tuition is free in all courses and departments to students whose parents reside in Oklahoma. The College is supported entirely by the Federal Government and by the State of Oklahoma as a part of the free school system.

LAWS CONCERNING THE COLLEGE

This College owes its origin to a bill offered by U. S. Senator Morrill, of New Hampshire, in 1862, which provided funds for one such institution of learning in every State of the Union and set aside certain public lands from which endowments have come to each of these state and federal colleges. Therefore these institutions are known as "The Land Grant Colleges". The National Grange gave the "Morrill Bill" cordial support and was largely instrumental in securing its final passage.

This act of Congress, approved July 2, 1862, gave to each state which accepted its provisions 30,000 acres of government land for each one of its representatives in Congress, the proceeds to be applied to the endowment and maintenance of colleges

> "where the leading object shall be, without excluding the other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, ... in order to promote the liberal and practical education of the industrial classes in the various pursuits and professions of life".

Again, in 1887, Congress provided for an Agricultural Experiment Station in connection with each of the Land Grant Colleges:

> "That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiments respecting the principles and applications of agricultural science there shall be established under the direction of the College in each state or territory established . . in accordance with an . . . 'Act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts' . . . a department to be known and designated as an 'Agricultural Experiment Station' ".

The First Legislature of the Territory of Oklahoma adopted a resolution assenting to and accepting the provisions of Congress and established the Oklahoma Agricultural and Mechanical College in Payne county, December 25, 1890.

Congress set aside 250,000 acres of public land as a permanent endowment for this institution in the Enabling Act granting statehood.

The Oklahoma Constitution provides that this College shall be under the supervision and management of the State Board of Agriculture in the following:

> "Said Board (of Agriculture) shall be maintained as a part of the State Government and shall have jurisdiction over all animal quarantine regulations and shall be the Board of Regents of all State Agricultural and Mechanical Colleges . . . "

The Oklahoma Constitution is the only state constitution recognizing the fundamental importance of Agriculture and Domestic Science. Our constitution declares that

> "The Legislature shall provide for the teaching of agriculture, horticulture, stock feeding and domestic science in the common schools of the State".

According to the Oklahoma State Statutes *"The Agricultural and Mechanical College shall be the technical head of the Agricultural, Industrial and allied Science system of education in Oklahoma".*

EDUCATIONAL POLICY

Th Board of Regents has carefully considered the wide field of education in which this College was designed to perform its work and has instructed the faculty to provide courses of instruction in agriculture, mechanic arts, military science, domestic science and the "related branches, without excluding other scientific and classical studies" as expressed in the Morrill Bill. All the courses offered, which are fully described in this announcement, are therefore essentially scientific, practical, industrial and professional, while at the same time providing a "liberal" education. These courses are of true college grade and each includes instruction in mathematics, English language, history, physics and political economy, etc. The degree to which each of the four year courses leads is *Bachelor of Science.*

The College carries on many lines of work not commonly known as "school work", though truly educative in all respects. It is the earnest desire of the management to assist in the educational work in behalf of grown people who may lack spare time to attend College or to visit the Experiment Station. This is sought to be accomplished by sending out pointed and practical literature, by supplying well informed lecturers to popular gatherings and to meetings of farmers' and teachers' institutes or other conventions, *under conditions favorable to profitable presentation and discussion* of the subjects. The acts of Congress and the State Legislature make certain forms of this "college extension" work obligatory.

NEW STATE SCHOOLS OF AGRICULTURE

The College sustains close and important relations to the six "Secondary Agricultural Schools" provided for by the State Legislature. The school for the First Supreme Court Judicial District is located at Warner, Muskogee county, and is named the "Connors School". That for the Second District is located at Tishomingo, Johnston county, and is named the "Murray School". These two schools have been in successful operation during the past year.

The school for the three Panhandle counties is located at Goodwell, in Texas county, and is named the "Panhandle Agricultural Institute". The schools for the Third, Fourth and

Fifth Supreme Court Judicial Districts have not been located at this writing.

FINANCIAL POLICY

The Agricultural and Mechanical College receives for its support four classes of funds:

1. A fund derived from the United States Government that may be used for certain grades of class instruction in the College, known as the "Morrill Fund". This fund can be expended only for instruction of students in literature, languages and sciences, and by a recent amendment to prepare school teachers in the principles of agriculture and domestic science.

2. Two United States Government funds for investigation of scientific and agricultural matters of importance to farmers and for publishing the results of such tests and experiments, known as the Hatch and Adams funds. These support the Oklahoma Agricultural Experiment Station.

3. A fund derived from the rentals of public lands donated by Congress to this College by the Enabling Act granting statehood to Oklahoma, known as the "Land Lease Fund". This fund may be used for operating expenses of the College proper.

4. A fund appropriated annually or bi-ennially by the State for buildings, repairs and extensions to the permanent equipment of the College.

The fact that all the actual expenses of the College are paid by the State and Federal Governments enables the young men and women of Oklahoma to secure an education in any one of the several divisions of the College without expense except for board, clothing and books. The College thus becomes a part of the great free school system and any white young man or woman 14 years of age or over who earnestly desires an education may obtain it here, though unable financially to bear all of his or her living expenses. All students attending the College are encouraged to earn at least a part of such personal expenses as a matter of business training. The experience of recent years proves this to be a wholesome policy.

GRADUATES OF THE COLLEGE

The life of the entire student body of the College is marked by practical purpose and earnest work rarely found in any institu-

tion. Scores of graduates of the College (and many more who have studied without graduating) have gone out from the institution and now reflect credit on the system of education maintained here. These measure up to the highest standards of educated citizenship set by the oldest and largest colleges and universities in America. As scientists, as master workmen, as farmers, as agricultural experts, dairymen, electrical and civil engineers, school teachers, business men, accountants, teachers of domestic science and art, as fathers, mothers and citizens, these have added to the progress of the state and nation and have justified the hopes of their families and friends.

The chart shown on page 9 will clearly indicate the present organization, purpose and field of work of this institution as the head of the new state system of "applied science education" in Oklahoma.

INSTRUCTION FOR TEACHERS

The Constitution of Oklahoma (Art. XII Education) declares:

> "The Legislature shall provide for the teaching of agriculture, horticulture, stock feeding and domestic science in the common schools of the State".

The First State Legislature created the New Chair of Agriculture for Schools in this College:

> "whose duty it shall be to direct and advise in all matters relating to the teaching of agriculture and allied subjects in the common schools, ... He shall visit the schools, the teachers' institutes, the summer normal schools and the State Normal Schools, advise with the teachers and officers concerned, ... and shall prepare, print and distribute such leaflets and other literature as may be helpful to teachers and pupils concerned or engaged in teaching industrial, practical and scientific subjects".

The law also states that:

> "the Agricultural and Mechanical College, its president, professors and employees shall lend such assistance in carrying out the object aims and purposes of the State Constitution regarding the teaching of agriculture and allied practical subjects as shall not conflict with the immediate duties incumbent on them in said institutions".

These constitutional and statutory requirements caused the office of the State Superintendent of Education to write the President of the College in October 1908, "I would suggest that you

put a special course in the A. and M. College to be known as the Teachers' Normal Course, . . . that you add to your course not less than a year's work in pedagogical lines, including history of education, philosophy of education, and school management.

"JOHN W. WILKINSON,
"Assistant Superintendent".

State Superintendent E. D. Cameron appeared before the Board of Regents October 6, and explained the necessity for the College rendering all assistance within its power in training efficient teachers and urged the introduction of the special course for teachers. The board authorized the faculty of the College to plan and inaugurate such courses.

On the recommendation of State Superintendent and in harmony with the legislative enactments, there has been established a regular collegiate course of instruction known as the Teachers' Normal Course. The present demand in this State for trained teachers in technical subjects is already very great.

To further supply the great demand in Oklahoma for trained teachers, the College conducts a summer normal institute for teachers.

Serious responsibilities are thus placed on this College and its faculty in the matter of preparing and training teachers to instruct in the great and diverse occupations of our people—Agriculture and Home Building. The work of the "Department of Agriculture for Schools" in this institution in behalf of the teachers and schools, is carried forward with vigor assisted by experts and scientists from a number of other departments of the College.

PURPOSES

The aims of this College are not merely to train students for increased production or to double or quadruple the earning capacity of the young people who attend the College, but a distinct effort is made to train and shape them into useful citizens of the highest types. The training and the knowledge thus acquired will prove a lasting power for good to the individual student and to the State in which we live.

The primary purpose of all the work done by this institution is to render the youth of Oklahoma more capable and effective; to

increase vitality and to add power; to enrich the ideals of youth and to make the lives of all who come in contact with the College and its work brighter, purer, and better.

The style of education afforded here does not stop with increase in skill or the acquirement of the "three R's". It goes further and accomplishes true education, the development of the whole man—the hand, the head, the heart.

By adding "skill" the man's efficiency is increased three fold; by adding to skill education his productive power is again multiplied by at least three—a nine fold gain over the unskilled, uneducated man! Here lies the problem of higher standards of living and citizenship "for the industrial classes in the various pursuits and professions of life".

The purposes of the institution may be stated more specifically as follows:

In agriculture: To equip young men for expert and scientific work as practical farmers, as scientific authorities and investigators, as teachers, and as valuable contributors to the advancement of scientific agriculture; in its short courses to give the maximum of scientific agricultural training and information in the minimum of time to those who cannot take a collegiate course; in its reading course to direct a proper and profitable line of supplementary reading for the interested teacher; and in its experiment station work, by research and experimentation, to be a trusted guide and leader to the farmers of the State.

In engineering: To fit young men for positions of profit, responsibility, and usefulness in the professions of mechanical, electrical, architectural, and civil engineering.

In applied science: To give such proficiency in one or more of the natural sciences as will enable the graduate to conduct research work on his own account, to accept positions which require expert service, and to become a reliable authority in his chosen science.

In domestic science and arts: To prepare young women for the duties of home making in all its branches as specialists; to prepare teachers, matrons, etc., for the government service.

In teachers' normal training: To educate and train young men and women to become expert teachers of high professional

standing, having first a broad foundation consisting of the common branches and the natural sciences.

In business training: To prepare young men and women for acceptable service as clerks, stenographers, bookkeepers, and for other positions in the business world.

In citizenship: So to train young men and women as definitely to fit them for service profitable to themselves and valuable to the State; to this end training the eye and the hand as well as the mind and the heart, seeking thus to realize the purpose declared by Congress, of promoting "the liberal and practical education of the industrial classes in the various pursuits and professions of life".

It must not be understood that all of the lines of instruction named above can be given to one student. A further reading of the catalog will disclose the several courses and the choices which are open to the student.

LAND AND BUILDINGS

The College campus, farm, and experiment grounds embrace a tract of 1000 acres. This great increase in land owned by the College for farm and experiment station purposes is due to an act of Congress approved February 8, 1905, donating to the institution a section of school land adjoining the old College farm on the west.

The present College buildings were erected by the State at a cost of over $200,000.00, and they are equipped with the latest and best appliances and apparatus, representing an outlay by the government of approximately $160,000.00. All buildings are steam-heated, electric lighted, and have sewer connections.

New buildings costing $168,000.00 will be added to the present plant for the better accommodation of the young men and young women attending the College. The Domestic Science Hall will cost $62,000.00. Twenty-five thousand dollars will be devoted to the erection of a dormitory hall, to be used as a home for young men.

The College has also a well selected Library of 13,000 volumes, besides some 30,000 unbound publications. All of the desirable current periodicals are received.

"Morrill Hall", named in honor of Senator Justin S. Morrill by an act of the Legislative Assembly providing for its construc-

tion, is the most considerable building now occupied by the College. The cost complete, with heating plant, was $75,000. The building has three full stories, the first faced with white Indiana limestone and the others with red pressed brick of first quality. It contains quarters for the administration and business offices of the College and station, and suitable offices, lecture rooms, and laboratories for the departments of animal husbandry, agronomy, horticulture, and agricultural chemistry, and the chemistry laboratories of the experiment station. There are fireproof vaults on the first and second floors. The general dimensions of the building are 76 by 166 feet.

"Library Hall" is a brick and stone building, two stories and basement, 76 by 72 and 111 by 65 feet. It is used, in addition to the accommodation of the library and reading rooms, for the departments of zoology and veterinary science, music, physical training for girls, domestic economy, and the general auditorium —with lecture rooms, toilet rooms, etc., in the basement.

"Central Building" (the original building of the college) is a two-story brick and stone building with a basement, 66 by 60 feet. It is now used for instruction in mathematics, English, and business courses, and contains the printing office of the College.

The "Chemistry Building" is a two-story brick structure with basement, the main portion 64 by 42, wing 54 by 32 feet. It is used solely for instruction in chemistry and for the offices of the department.

The buildings of the engineering department consist of a structure of brick and stone, 80 by 47 feet, two stories with basement, devoted to the class room work of the department, drawing room, reading room, and offices; the new shop building, of brick, with a two-story portion 72 by 36 feet, and a wing 180 by 40 feet, containing the class room, drawing rooms, and office of the department of civil engineering, a testing laboratory, blacksmith shop and foundry, and also the gymnasium; the old shop building, a two-story stone building, 80 by 30 feet, containing the machine shops, electrical laboratory, and the wood-working shops; and the boiler house, a stone building 60 by 40 feet. A new building with new heating plant has been provided for by the last Legislature to cost $40,000.00 and this will be completed in another year.

The "Dairy Building" is a brick structure of two stories, 60 by 30 feet, containing the class and operating rooms of the department and also the equipment for a moderate volume of commercial dairy work.

There are also a brick barn, 60 by 96 feet, a residence, a green house, and several other minor structures.

NEW BUILDINGS

No better indication of the steady growth of the College could be given than by noting the growth of its buildings. To the eight large structures now in use there will be added soon the following for which appropriations are now available through the liberality of the First and Second State Legislatures.

A new domestic sicence hall will be erected during the fall from funds recently appropriated by the State Legislature for the accommodation of young women attending this College. The Women's Building will cost $62,000.00 and is now in course of construction. Besides the necessary class rooms, sewing, cooking, and music rooms, bath rooms, and dining hall, there will be a large gymnasium, special room for the sick and comfortable living rooms for 80 girls. A matron will be in charge of this hall.

The boys' dormitory will cost $25,000.00. This will contain furnished rooms for 120 young men, with necessary baths and other conveniences. The building will be open in October or November.

The heating plant will cost $40,000.00. This will take the place of the present plant. A new site will be chosen and the boilers and other features will be adequate for steam heating both old and new buildings.

The animal husbandry building will cost $15,000.00. In this new structure ample accommodations will be had for the study of the fine live stock owned by the College and the class work for veterinary clinics will be held here.

The new barn will cost $10,000.00. This will be used as a general barn until the dairy herd requires all of the space, and will provide shelter for the pure bred stock, machinery, seeds, etc.

The new greenhouse will cost $5,000.00. In this addition to present accommodations special class instruction will be given at

all seasons with various crops grown under those conditions which afford the greatest amount of information to students of plant life.

EQUIPMENT

In chemistry, physics, mineralogy, botany, zoology, entomology, physiology, agriculture, horticulture, and veterinary science, the College is equipped with the best appliances and apparatus, consisting of collections, models, charts, microscopes, balances, etc.

Of the Library

The College has a well selected library of about 13,000 volumes, besides some thirty thousand unbound publications. The books are kept in fire-proof stack rooms, and the large general reading rooms of the College are immediately adjoining. In these rooms are kept all the chief current magazines, representative metropolitan newspapers, and the leading and many of the local newspapers of Oklahoma, dictionaries, encyclopædias, and other books of ready reference, history, literary, and scientific. The books and periodicals in the reading room are for general reference and cannot be taken from the library, but the general library books may be taken out by the students, each student being entitled to have two books at a time for a period of two weeks.

Of the Engineering Department

The amount of space available for practical work in this department has been almost doubled by the completion of the new shop building referred to in a previous paragraph. The building equipment now consists of the engineering building, containing lecture rooms, drawing rooms, offices, and bath rooms; the old shop building, containing the mechanical, electrical, and wood-working laboratories; the boiler house, containing the central heat and power plant; the new shop building, containing the class room, drawing rooms, and office of the department of civil engineering, a testing laboratory, a large blacksmith shop, and a foundry. The equipment of the machine shop includes lathes, shaper, milling machine, planer, a universal grinding machine, a

drill press, and an extensive assortment of small tools. The wood-working shop is supplied with a circular saw, a band saw, wood turning lathes, a pattern-maker's lathe, and work benches with complete sets of carpenter tools. The foundry is supplied with an 18-inch cupola, core oven, sand sifter, and foundry benches and tools. The air blast is furnished by an electrically driven fan. In the electrical engineering laboratory the machinery has been selected and arranged in such a manner as to afford students the greatest facility for acquiring a thorough knowledge of different types of electrical machinery and their management. Especial attention has been devoted to alternating polyphase machinery—justified, it is believed, by the rapid development of this branch of engineering. Power is furnished by a 40-kilowatt and a 30-kilowatt dynamo directly connected to 10x10 automatic engines. The other electrical machines, in direct and alternating current dynamos and motors, static and phase-changing transformers, and synchronous converters, are all of the latest designs. The department is well supplied with necessary apparatus, including voltmeters, ammeters, and wattmeters of wide range, as well as galvanometers, and other instruments of greater precision. There is also a good selection of physical appartaus for purposes of demonstration and instruction. Apparatus for the mechanical laboratory has been installed in the new shop building. A 100,000-pound automatic and autographic testing machine has been set up and is now in use, also a ten horse-power Alden dynamometer. The apparatus will eventually include steam engines, surface and jet condensers, gas engines, hot air engines, a torsion testing machine, and gas, oil, and coal calorimeters—beside a steam turbine and a steam boiler for experimentation work.

Of the Department of Chemistry

This department, by reason of the removal of the experiment station offices and chemistry laboratory to Morrill Hall, now occupies the entire Chemistry building. The lecture room seats comfortably seventy-five students, besides containing desks and extensive equipment for demonstration purposes. Quantitative, qualitative and private laboratories and sample rooms occupy the second and third floors and one room on the first floor. A

special agricultural laboratory is fitted up for senior students in agricultural chemistry. The laboratories are fitted with work desks designed to meet the demands of the student. Each student has before him two gas cocks, two water cocks, and a trough of running water, and thus need never leave his desk unless it be for a special reagent or for work at the hydrogen-sulfid hood. There is located in the basement of the building a 150-light Terrill equalizing gas machine, which furnishes light and laboratory heat of the finest quality. The department is equipped with the best of modern apparatus, glassware, and chemicals. This large supply of working material greatly facilitates independent laboratory work. In more advanced work the student is supplied with a complement of burettes, pipettes, graduated flasks, desiccators, Gooch crucibles, etc. It is the experience of instructors in teaching quantitative analysis that the best results are obtained by having not more than three, preferably two, students for each analytical balance. In recognition of this the department is equipped with two E. & A., one Rueprecht, one Staudinger and seven Sartorius analytical balances. There are in addition to these one E. & A. assay balance, one gas analysis balance, and three other balances for rough weighing. In sugar and beet analysis, aside from the ordinary methods used, the student is taught the use of the polariscope and has at his disposal one Schmidt & Haensch polariscope, equipped with a double set of observation tubes. In the study of mineralogy there is a well chosen collection of several hundred specimens, supplemented by about 300 pounds of working material. Aside from these minerals there are 75 glass and 60 wooden crystal models, and 21 models of precious stones.

Of the Department of Entomology

This department occupies rooms on the second floor of Morrill Hall. These rooms are used as laboratories, dark rooms, store rooms, lecture rooms, and office. The equipment of the laboratories includes microscopes of recent manufacture—Zeiss and Bausch & Lomb make; a number of compound microscopes designed for special purposes; small microscopes and a large assortment of lenses; a Zimmerman-Minot rotary microtome; camera lucida; photographic and photomicrographic cameras and

accessory apparatus; an ample supply of glassware; the entomological collections of the Experiment Station; Auzoux models showing the anatomy of insects; apparatus showing the metamorphoses of different types of insects.

Of the Department of Zoology and Veterinary Science

This department occupies quarters in Library Hall, consisting of a lecture room and laboratories for general biological work. The apparatus for this work consists of twenty compound Zeiss and Lietz microscopes, with complete sets of eye pieces and objectives, micrometers, cameras, microtomes, thirty sets of dissecting instruments, and photomicrographic apparatus. The department is also well supplied with dissectible models of various types of animals, including an Auzoux model of the horse; with skeletons of most of the lower animals and of man; and with numerous prepared skins of birds and animals for purposes of demonstration and instruction. For the work in physiology there are models of the various organs of the body, wall charts, and skeletons, mounted and unmounted.

Of the Department of Agronomy

The courses of instruction which are offered in agronomy include those studies that are directly related to the production of farm crops, such as farm machinery, with special reference to tillage and harvesting implements; soil physics, which has a direct bearing on problems of soil moisture, soil temperature, and aeration; soil fertility, which pertains to the productive capacity of soils, and to the methods of securing maximum yields through the use of manures or fertilizers; plant breeding, with special reference to the staple crops in Oklahoma; and farm crops, in which the history, culture, and uses of economic plants are considered. The department occupies several laboratories in Morrill Hall, and the instructional work in the respective branches mentioned is given in this building. The farm machinery laboratory contains approximately twenty-five hundred square feet of floor space, and is equipped with up-to-date machines, such as plows, cultivators, discs, grain drills, mowers, binders, and other representative machines. Another room is used for farm power machines and is equipped at present with a

number of gasoline engines. The material in these laboratories was loaned to the department by leading machine companies, and as the machines were all sent in during the present year, the most improved types of farm implements are at the disposal of the student. The seed testing laboratory is located in the basement and contains germinating boxes, balances, and the necessary material for testing seeds. The crop museum is a room covering fifteen hundred feet of floor space, and contains four large cases which are used for storing exhibition specimens of grasses, grains, etc. The instructional work in corn-judging and seed selection is given in this room. The soil physics laboratory is a room 29 by 24, located on the third floor. This room contains the necessary apparatus for making studies in capillarity, movements of soil moisture, aeration, and the mechanical composition of the soil. The experiments in crop production which are under way at the station afford excellent facilities for the study of definite problems in connection with the laboratory work.

Of the Department of Animal Husbandry

Instruction in this department is given in Morrill Hall and in the college barn. The latter is a two-story brick structure, 60 by 96 feet, which, in addition to providing storage space for hay and grain and stabling for livestock, contains a room for stock-judging. The livestock equipment affords an excellent opportunity to study the improved breeds of stock. The pure-bred stock represented is as follows: cattle—Shorthorns, Herefords, Aberdeen Angus, Jerseys and Red Polls; swine—Poland Chinas, Berkshires, Chester Whites, Duroc-Jerseys; sheep—Shropshires, Merinos and Dorsets; horses—Percherons. In addition to the pure-bred stock, grade animals of the different breeds are kept on the college farm, and a number of jennets have been purchased. Breeds not represented are studied with the aid of charts and engravings. The different experiments carried on with livestock by the experiment station afford the students an excellent opportunity to study the application of the principles discussed in the class room.

Of the Department of Dairy Husbandry

A separate department of dairy husbandry is maintained. The department is located in a two-story brick building, 60 by 30

feet. The work of the department is divided along two lines, farm dairying and commercial creamery work. The instruction given relates particularly to "dairy farming" and the object sought is to develop a keener interest in dairy work and a kinder feeling for the dairy cow. A laboratory room, 15 by 25, is equipped with Babcock testers and glassware for testing milk and cream, and determining adulterations of dairy products. The various makes of cream separators are studied and tested. Barrel, box, and swing churns are used in making butter in the farm dairying classes. Commercial creamery work is carried on throughout the entire year. Last year over $70,000.00 was paid out for the cream delivered by the farmers in the vicinity of the college. The equipment consists of the modern machinery for making creamery butter—a No. 6 Disbrow churn, a 300-gallon McAreavy and a 300-gallon Boyd cream ripener, a 10-horse power Fairbanks-Morse gasoline engine, starter cans, steam Babcock testers, printing tables, ice cream freezers and complete outfit for course of instruction in ice cream freezer factory, etc. In this division of the work opportunity is given to students who desire to follow creamery work to secure practical training in all the phases of the work and fit themselves for managers of creamery plants.

Of the Department of Horticulture and Botany

This department is now installed in Morrill Hall with abundant class and laboratory room and full equipment for photographic work. The horticultural equipment includes a complete line of garden seeders; tools for lawn work; spray pumps with fittings; many complete sets of garden tools; complete models of common varieties of apples, peaches, plums, pears, cherries, etc.; charts showing diseases of fruits and of garden plants; a herbarium of cultivated plants showing most of the plants cultivated in the United States; five complete sets of instruments used in plant breeding; five complete microscopes and accessories. In the way of practical operations, this department is well situated, having at its command the extensive vineyards and orchards of the experiment station. The horticultural grounds include sixty acres with more than fifty thousand trees and vines. For instruction in forestry a plantation of forty thousand trees is avail-

able, both for observation and for practical work in propagation, pruning and transplanting. The botanical laboratory equipment includes 24 compound microscopes of recent manufacture (5 of Zeiss and 19 of Bausch & Lomb make); a number of compound microscopes, small microscopes, and lenses; several hundred microscopic preparations of simple plant and plant tissues and pathological specimens for special study; an assortment of chemical re-agents and stains; special apparatus for the study of plant physiology; a large herbarium which includes authentic collections of fungi, algæ, lichens and mosses; the botanical collections of the Experiment Station; Auzoux models illustrating the anatomy of flowers and fruits; a set of Kny botanical charts showing the minute details of plant structure and reproduction; a set of Peter charts that show and represent plants of many orders; a collection of woods, fibers, seeds, etc., and also of economic medicinal and agricultural plants. There are several collections of hardy herbs, shrubs, and trees planted on the college grounds, from which material may be obtained for the use of the classes in botany.

Of the Department of Domestic Science and Arts

This department is located in the rooms on the first floor of the west wing of Library Hall. The department includes a kitchen laboratory, class dining room, sewing room, office and store room. The kitchen laboratory has equipment sufficient to enable fourteen students to work at one time, and consists of fourteen conveniently arranged desks, furnished with all the dishes and utensils necessary for individual work; cases for the large utensils, supplies, and illustrative material; one gas range, one kerosene range, and three small gas burners on the work desks; charts and samples to aid in teaching and studying the composition and preparation of the different foods. The equipment of the class dining room consists of a full set of dining room furniture and dishes for the use of the classes studying dining room management and serving. The sewing room is equipped with one large cutting table and six sewing tables, all made with drawers in which to keep garments and material; six sewing machines of different makes; a large mirror for use in dress fitting; illustrative material, such as cotton, silk, and flax fibers, needles, etc.; and twenty-four sewing chairs.

Of the Gymnasium

The new gymnasium is a well lighted room 45 by 65 feet and is well equipped with all the apparatus necessary for indoor work, and with new bathing conveniences. The apparatus is all new and the various pieces are well suited for a great variety of exercises such as are usually given in a well balanced course of gymnasium work. For class exercises in physical culture a large number of dumb bells, Indian clubs, and wands are provided. Every student in the College is required to take a reasonable amount of systematic physical culture, either in gymnasium or in outdoor exercise of suitable character. This requirement may be modified to some extent in the case of young men and young women who, in order to help meet expenses, are performing labor on the farm or elsewhere.

Of the Printing Department

This department is supplied with power and job presses of the latest pattern suited to turn out the highest quality of book work and special job orders. The latest model of type-setting machine is used in addition to the hand set type. The machinery is driven by individual motors. Students are employed in the department and it is the purpose of the College to develop full courses of instruction in printing. All of the large volume of printing needed by the College and Experiment Station is done by the department and some of the official reports of the State Board of Agriculture are turned out from the College press.

Of the Agricultural Experiment Station

This department of the College is maintained for the purpose of conducting experiments relating to the development of our agricultural interests and the widening of our knowledge on subjects in any way connected with farm life. Experiments in crop production, stock raising and feeding, and fruit and vegetable growing are conducted on a 1000-acre farm. A tract of 640 acres, described on a previous page, was granted by act of Congress, in February, 1905. In the laboratories animal and plant

diseases, insects, the composition of feeding stuffs, and kindred subjects are investigated by trained specialists, each of whom has devoted many years of study and preparation to the particular class of work committed to him.

Increasing demands made on the various stations throughout the United States induced Congress to provide additional funds. An Act of Congress, approved March 16, 1906, provides for an ultimate increase of the federal appropriation for each experiment station to $30,000 per annum. The money derived from this act is known as the "Adams Fund" and is available only for original research and investigation.

Of the Other Departments

The departments of the English Language and Literature, of Foreign Languages, and of History and Political Economy are properly supplied with facilities for instruction and are represented with special fullness in the library. The departments of Mathematics and Civil Engineering have extensive appliances for demonstration, instruction, surveying and other practical work. The Business Department is equipped with ten typewriters, one Elliott & Hatch book typewriter, and other necessary appliances.

COURSES OF INSTRUCTION

The Agricultural and Mechanical College of Oklahoma is composed of a number of regular courses of instruction, or schools of collegiate grade, designed to educate and train the young men and women of Oklahoma for the industrial and scientific pursuits relating to the many branches of agriculture, mechanic arts, and domestic science.

The regular courses of instruction are six in number:

1. In Agriculture—The Four Years' Course, the Two Years' Course, the Ten Weeks' Course, the Dairy Course, the Cotton Grading Course, the Reading and the Farmers' Short Course.
2. In Mechanic Arts or Engineering—The Mechanical and Electrical Engineering, Architectural and the Civil Engineering Course.
3. In Science and Literature—The Science and Literature Course.

4. In Domestic Science and Art—The Domestic Science and Art Course.
5. In Teacher Training—The Teachers' Normal Course.
6. In Business—The Business Course.

The courses in Agriculture afford instruction to students by the following departments in the subjects named:

1. Animal husbandry: breeds of stock; stock feeding; stock judging; animal breeding.
2. Agronomy: crops; agricultural physics; farm economics; soils and fertility.
3. Horticulture: elementary horticulture; pomology; plant breeding; evolution of cultivated plants; forestry.
4. Dairying.
5. Botany: entomology; plant pathology.
6. Inorganic chemistry: theoretical chemistry; agricultural chemistry.
7. Zoology: embryology; advanced physiology; bacteriology; veterinary medicine.
8. Mathematics; physics.
9. English language and literature.
10. German.
11. General history; social and industrial history; law.
12. Public speaking.
13. Business forms.
14. Geology.

The Engineering Courses afford instruction to students by the following departments in the subjects named:

1. Mechanics: woodwork; foundry and pattern making; drawing; descriptive geometry; kinematics; steam boilers; blacksmith shop; machine shop; electricity; indicators; machine design; electrical engineering; stresses in framed structures; electric lighting and power; heating and ventilation; thermodynamics; design of framed structures; telegraph and telephone engineering.
2. Surveying: hydraulic engineering; irrigation engineering; roads, streets and pavements; sanitary engineering; railroad engineering; analytical and graphical methods; masonry construction.
3. Mathematics; physics.

4. Chemistry.
5. History; law.
6. English.
7. Public speaking.
8. Business forms.

The Science and Literature Course affords instruction to young men and women by the following departments in the subjects named:

1. Elementary botany; plant pathology; anatomy and physiology of the spermatophytes; families of the spermatophytes; morphology of the spermatophytes.
2. Inorganic chemistry; theoretical chemistry; organic chemistry; physical chemistry; agricultural chemistry; industrial chemistry; mineralogy; metallurgy.
3. Zoology; histology; advanced physiology; cellular biology; embryology; bacteriology.
4. Domestic science and art.
5. The English language and literature.
6. Mathematics; physics; surveying; astronomy.
7. Horticulture; elementary agriculture; forestry.
8. History; law; government; sociology.
9. German; Latin.
10. Drawing; woodwork.
11. Public speaking.
12. Business forms.
13. Geology.

The Domestic Science and Arts Course affords instruction and practical training to students by the following departments in the subjects named:

1. Domestic Economy: cooking; sewing; hygiene; sanitation; millinery; etc.; household science; home economics; home nursing; textiles; chemistry of foods; social observances; history of costume.
2. Drawing and Art: freehand drawing; work in colors and charcoal; designing; home decoration; wood carving, etc.
3. The English language and literature.
4. History; civics; political economy; sociology; law.
5. Mathematics; physics; drawing; astronomy.
6. German; Latin.

7. Chemistry.
8. Music.
9. Zoology; advanced physiology; embryology; bacteriology.
10. Dairying; horticulture; forestry.
11. Botany; entomology.
12. Business forms.

The Teachers' Normal Course gives both study and practice teaching in the common branches and the sciences and industries by the following departments with some other elective subjects:

1. Pedagogy: history of education; methods and management; psychology; theory and practice; philosophy of education.
2. English language and literature, three years of five hours per week.
3. History of Oklahoma, the United States, England and general history two years.
4. Mathematics: arithmetic; elementary and high school algebra; geometry; trigonometry; analytical geometry; astronomy; and calculus if desired.
5. Zoology: advanced physiology; embryology; bacteriology.
6. Chemistry.
7. Music.
8. Domestic science.
9. Domestic arts.
10. Animal husbandry.
11. Horticulture.
12. Agronomy: geology, soil physics.
13. Mechanical engineering.
14. Physics.
15. Botany and entomology.

The Business Course affords instruction to young men and women by the following departments in the subjects named:

1. Bookkeeping; commercial arithmetic; banking and business correspondence.
2. Stenography and typewriting (including manifolding, letter-press work, typewriter dictation, etc.)
3. Rhetoric and composition; spelling and writing.
4. Commercial law.

REQUIREMENTS FOR ADMISSION

Students may be admitted to the College in one of three ways: (*a*) by examination, (*b*) by certificate, (*c*) by special assignment. Entrance examinations are chiefly written, and candidates must make a grade of seventy per cent to pass in a study. Candidates for admission by certificate should present to the Committee on Entrance a statement from the last school attended, showing classification, grades, and the amount of work covered in each subject. All credits and assignments are at the option of the head of the departments concerned, and are conditional upon satisfactory work during the student's first term in college.

To the Sub-Freshman Class

The Sub-Freshman Class has been established to secure, under competent instruction, a higher degree of efficiency in the studies which underlie the more advanced collegiate work, particularly in English and mathematics. Applicants may be admitted to this class without examination on satisfactory records from the eighth grade of city schools, or on diplomas from common schools. Not holding these, they must pass a satisfactory examination in reading, spelling, penmanship, geography, United States history, grammar, and arithmetic.

To the Freshman Class

Students who have satisfactorily completed the tenth grade of approved high schools may be admitted to the Freshman Class without examination. Other applicants must pass examination in the subjects above mentioned, and in higher arithmetic, algebra to quadratic equations, elementary rhetoric and composition, physiology, and physical geography.

To Advanced Standing

Graduates of accredited high schools may be admitted to the Sophomore Class on their diplomas without examination. Graduates and under graduates from other colleges and universities of good rank and standing will be admitted and granted such

credits as their work will justify, so far as this work applies in any of the courses offered in the College.

Accredited Schools

Graduates of accredited high schools will be admitted on their diplomas without examination to the work of the Sohpomore year. The following is a tentative and partial list of the accredited high schools for year 1909-10: Ada, Alfalfa, Altus, Ardmore, Blackwell, Chandler, Comanche, El Reno, Kingfisher, Lawton, McAlester, Medford, Muskogee, Norman, Oklahoma City, Pawhuska, Ponca City, Shawnee, Stillwater, Tulsa, Walters. Other high schools which should be on the list failed to send us data for consideration and classification. Those not accredited will be considered and classified at the convenience of the principals or superintendents concerned.

To Special Work

Students not candidates for degrees, may take such special work as they desire, subject to the approval of the President, but no student will be permitted to take special work until he has satisfied the requirements for entrance to the Sub-Freshman Class; provided, however, that students of mature age, not candidates for degrees, may elect special studies, with the consent of the President, without being required to fulfill the entrance requirements above mentioned, if in the judgment of the heads of the departments concerned they can successfully carry the work.

Tuesday, September 7, and Wednesday, September 8, 1909, will be devoted to the examination and classification of new students. All candidates for admission, whether by examination or by certificate, should present themselves to the Committee on Entrance Tuesday morning at nine o'clock, or as soon thereafter as possible.

Students intending to apply for admission by examination are urged to satisfy themselves, before coming to the College that they can pass a reasonable examination in the subjects required.

Specimen examination questions are printed on the last few pages of the body matter of this catalog.

Admission to Other Applicants

As stated above, holders of common school diplomas will be admitted to the Sub-Freshman Class without examination. Pupils of *city schools* who can present satisfactory records from the *eighth grade* may also be admitted to this class. Pupils of city schools who have satisfactory records from the *tenth grade* may be admitted to the Freshman Class.

Pupils having *no diplomas* will be admitted to the Sub-Freshman class by passing a satisfactory examination in reading, spelling, penmanship, geography, United States history, grammar and arithmetic.

Pupils having no diplomas will be admitted to the *Freshman* class by passing a satisfactory examination in the subjects before mentioned and in higher arithmetic, algebra to quadratic equations, elementary rhetoric and composition, physiology, and physical geography.

Under the rules of the College, applicants failing to pass entirely satisfactory examinations in *any two* of the subjects above named may be permitted to enter the class and pursue the studies of that class on condition that the deficient subjects be taken up as "back work" and mastered during the term. The latitude thus given will permit pupils from those schools in which physiology, physical geography or some other required subjects are not taught to enter the desired classes "conditioned".

COST OF ATTENDANCE

Board and Rooms

Rooms in the college dormitory for boys will be ready for use during the fall of 1909, but this hall will not be open in September, the beginning of the fall term. Furnished rooms in this building will be charged for at the rate of $3.00 per month, payable in advance. The building will contain bath rooms and all necessary facilities, will be heated by steam and lighted with electricity.

Board with room in private families can be obtained for $3.00 to $4.00 per week. Furnished rooms, $2.00 to $3.50 per month, if two occupy the room. Some of the students board in

students' clubs, thus reducing living expenses in that line to $2.00 to $2.50 per week.

Other Expenses

Tuition is free. The incidental fee is $1.50 a term. Text books will cost from $3.00 to $5.00 a term. Special students in stenography and typewriting are charged $2.00 a term for use of typewriter. A deposit of $2.00 a term is required of all students in the Sophomore Class in chemistry to cover laboratory breakage. Students in mechanical drawing are required to purchase their own sets of instruments, though the College will undertake to furnish them at the cheapest rate—about ten dollars. The use of musical instruments supplied by the College will be charged for at the rate of one dollar per month.

The total cost of attending the regular college courses embraces the items of board, books, clothing, and minor incidental expenses of a personal character. These may be safely estimated at $136 to $172 for nine months. About fifty per cent of the students materially reduce their expenses below the figures given by working in the several departments of the College and in the city of Stillwater, and many earn all personal expenses by diligent application.

Amount Required to Begin

Those students of limited means desiring to enter the regular College classes should have some $50 available with which to bear the first items of expense and to make sure of some months' consecutive study. This amount is estimated for young men to include:

Board and room two months	$27.00
Books, etc.	5.00
Athletic and other fees	1.50
Military uniform, entire suit cadet cloth	14.00
Personal expenses	2.50
	$50.00

With this sum in hand or available the industrious student may by his own efforts secure three or four months, or even a

longer period of study in the College. Extravagance in all forms is discouraged. The same estimate will apply to young women if cost of uniform be deducted.

Help

The operations of the farm and Experiment Station are carried on very largely by student labor, for which reasonable remuneration is allowed. This, in connection with other positions about the college buildings and grounds, and such opportunities as are offered in the city, has enabled a very considerable number of students practically to make their way through the course. The rate of pay is 12½ cents per hour for work faithfully performed. Many students are thus assisted and encouraged every year—the preference being given to those whose college work is meritorious. It must not be gathered from this that the College engages to afford employment sufficient to enable every worthy young man to complete the course without other resources. With the growth of the institution has come an increased demand for this employment which it is impossible to meet in full Yet very few students have been compelled to leave college in recent years on account of inability to secure work.

Education at Home

By this phrase, in this connection, is meant education for Oklahoma young men and women within the State of Oklahoma. More than 1350 people studied at this College the past year. This is strong evidence of appreciation of this institution by Oklahomans. There are many reasons why the young people of the State should seek their collegiate training within its borders. The expenses, as set forth in preceding paragraphs, are very low—much lower than in any even of the immediately surrounding states, and but a fraction of the necessary cost of attending eastern institutions. The nearness to home in case of accident or sickness is to be borne in mind. This institution, being young, is supplied with the latest and most approved equipment in all lines of scientic work. Its instructors are specialists in their respective departments, drawn from the leading technical

schools of the country. Its work is fully accredited elsewhere, whether for graduate work, or for employment in technical, industrial, educational, or Government service. There is no longer, in brief, any necessity of going beyond the limits of the State in order to secure an approved collegiate education. Moreover, if the student expects to live in Oklahoma, the acquaintance formed in his college life, of hundreds of other young men and women throughout the State will be an invaluable source both of profit and of pleasure to him.

GENERAL INFORMATION

The seat of the Agricultural and Mechanical College is Stillwater, in Payne county, a city of four thousand people, most beautifully and healthfully situated, at an elevation of 915 feet above sea level. Stillwater citizens and students of the College enjoy the advantage of electric lights, telephones, a city water system, sewerage and a very complete system of brick walks shaded continuously by trees.

Moral Influences

All the leading churches are represented in Stillwater and the students are encouraged to attend and participate in their services. As a matter of fact, the Sunday Schools and the young people's societies of the several churches are sustained very largely by the students from the College.

A Young Men's Christian Association and a Young Women's Christian Association are actively engaged in the numerous and beneficial lines of work characteristic of these organizations among students. These student organizations are not merely helpful to their membership but exert a wholesome influence on the moral life of the College. Social gatherings and entertainments are made to contribute to the moral welfare of the students of both sexes and these add to the address and composure of those who seek the helpful influences of this institution.

Examinations

In addition to the regular monthly examinations term examinations are held in all the classes at the close of each term. A

student who has had a grade of ninety or more in a given subject may be excused from the term examination at the discretion of the instructor. Reports of class standing will be supplied parents or guardians six times in the course of each year.

The Honor System

All examinations and tests are conducted under the Honor System. While the examinations are always given under the supervision of an instructor, they are relieved, as far as possible, of everything that resembles watching or espionage. The student is placed upon his honor, and signs the following pledge at the end of the examination: "I hereby certify on honor that I have neither received nor given assistance on this examination". This system was established by the faculty in March, 1895, in response to a petition signed by practically the entire student body. Students known to have received or given improper aid in examinations, tests, or reviews are promptly dismissed from College.

Grades and Reports

Grades are stated by a system of letters. The term grade is the average of the *daily grade,* and the *grades made in tests,* and the final grade for the term is one-half of the *term grade* and the *final examination* grade. Reports showing the grades and standing of students are sent to parents and guardians at the *end of each term.* Attention is particularly directed to these reports; they are the best indication of the work and standing of the student.

For the information of parents and others, it may be stated that the letter system of grading adopted by the College compares with the percentage system about as follows: A grade of A is practically equivalent to a percentage grade of 95-100, inclusive; a grade of B corresponds to 90-94 plus; C, to 80-89 plus; D to 70-79 plus. A final grade of D or better is necessary to pass in any study.

Theses

In some departments a thesis is required for graduation, and in other departments it is elective. Students intending to write

theses must select the subjects of their theses not later than the last week of the winter term, the subjects to be approved by the departments having charge of the work. All theses must be approved and ready to be officially typewritten not later than June 1.

Graduation Fee

A graduation fee of $5.00 is collected from each student graduating in any regular course of the College, and no student is recommended for graduation unless all fees, including that for graduation, have been paid.

Library

The use of the college library is free to all students. Every department of the College is largely represented in it, and it contains, besides, numerous reference books and the principal home and foreign periodicals. Students are permitted to consult freely, in the reading room, the reference books and periodicals, and to take to their rooms all other books under proper restrictions.

Literary and Other Societies

General literary societies are always in operation among the students, and, in addition, a number of clubs and societies have been formed by students specializing in science, engineering, and agriculture, for the purpose of supplementary work and investigation. The Athletic Association has charge of all local college sports, of Field Day exercises (April 22), and of the interests of the institution in the intercollegiate meets. The Oratorical Association has charge of the representation of this College in the preliminary and intercollegiate oratorical contests.

Of Interest to Girls

About one-third of the students of the Agricultural and Mechanical College are young women.

The course in Domestic Science is of the greatest practical value to young women because it is carefully arranged to give science with practice in the best possible proportion and order. This

course affords a complete education in hygiene, designing, artwork, cutting and fitting, plain and fancy sewing, but includes the subjects needed in a liberal education—English, history, mathematics, physical culture and music.

In order to meet the demand for a more general course, the "Science and Literature" course has been established. This course will be found to be especially adapted to the needs of young women desiring higher education in literature, languages, history, etc., and offering training in music, elocution, and domestic science.

Athletics, Military Drill and Discipline

The constant purpose of the College is to develop "sound minds in sound bodies" and to train the moral faculties. Clean sports and games on the field cultivate the mental and moral sides of the individual as well as the physical side, while affording needed occasions for relaxation and the repair of muscular and nerve tissue. Ball games and track athletics are encouraged by the College authorities.

The College Gymnasium for men is under the supervision of a competent physical director. The exercises in the women's gymnasium are directed by a trained lady instructor. A number of valuable additions to the gymnasia have been ordered for the use of students and these will be available during the coming fall term.

The A. and M. track team won the state championship of Oklahoma at the Oklahoma City meet in the spring of 1908, and championship of the Southwest at Austin, Texas, the same season. The team again won first in Oklahoma athletics in the spring of 1909. A field coach for football, base ball, and basket ball teams has been employed for the entire year and will devote his time to these sports and to track athletics.

The Northeastern Interscholastic Track and Field Meet is held on the College grounds annually, to which the schools of the northern and eastern portions of Oklahoma are especially invited.

Baseball and football are provided with suitable grounds, and three tennis courts are at the disposal of students.

Military drill is given for its physical and disciplinary effects, as required by the federal law establishing this

and other similar colleges. The good results of this drill are quickly noticed in the improved health and the carriage and deportment of those coming under its helpful influences. Young men, especially, need such training to give the erect carriage and strong physique that marks the man of military training.

An officer of the United States Army is assigned to duty at the College as commandant of cadets. Instruction in military science is provided for all male students and infantry drill is given in the field movements and under arms. Arms, accoutrements, and ammunition have been supplied by the Federal Government, which will supply this ordnance for use at the College during the coming year. The military discipline is mild but firm, and cultivates habits of punctuality, alertness and the sense of personal responsibility. Its good effect upon the physique and the health of the students is of added benefit to the gymnasium work heretofore given in this College.

A distinct effort is made to develop a progressive college spirit in the characters of all who attend this College. The discipline is morally sound and very systematic in its helpful influence on mind and body. As far as practicable the discipline is adapted to the varying needs of different dispositions coming under its influence.

Prizes

The President's Prize of $15 and $10 is offered for excellence in the Freshman Class. The President's Prize was won by Mac Hoke, of Quay. Engrossed commissions are awarded the commissioned student officers of the corps, and a handsome sword is given to the captain having the best drilled company.

The Young Men's Christian Association

The Young Men's Christian Association keeps in touch with the International Committee by sending student delegates to the conferences held annually at Ruston, Louisiana, and Oklahoma City. Classes in bible and mission studies are conducted during the entire year by students and members of the faculty, and many young men are taking part in this work. At the beginning of every school year the New Students' Committee meets every train and assists new students in securing homes. Receptions

are given by the Association as often as possible during the school year for the purpose of promoting acquaintance among the students. The Association maintains a well appointed room in Morrill Hall where the Association literature is kept and all young men are welcome for rest or study. Regular meetings are held in the college chapel every Sunday at 2:30 p. m., and a weekly prayer meeting is held from 7 to 7:30 every Wednesday night. These meetings, conducted by students, members of the faculty, or ministers of the city, have fostered the Christian life of the members and through them exerted a wholesome influence upon the entire student body.

The Young Women's Christian Association

The Young Women's Christian Association stands for an all-round young woman, developed physically, mentally, morally, and spiritually. The strengthening and broadening of Christian life is the great and chief purpose for which the Association exists, but as a means of reaching men and women, the social life of the College is used and, in fact, centers in the Y. W. C. A. and its co-worker, the Y. M. C. A.

The General Secretary, Mrs. Boyd A. Hill, devotes a great part of her time to the welfare of the girls, giving counsel and help in any way needed, and looking after them in case of illness. Under her direction the students carry on the work of the Association and have made it one of best organized bodies for work in the College. It carries on systematic courses in bible and missionary study, which are open to every girl in the school. On Sunday afternoon of each week a devotional meeting is held, and all girls are welcomed.

The Association is visited several times during the year by its State and District workers. These educated, devoted young women bring a great inspiration into the girls' lives.

One important service of the Association is the meeting of the new students at the trains and assisting them in finding homes, and arranging their schedules of study. The reception given to the new students by the two Associations is an annual event which is eagerly looked forward to by all. Another annual event given by the Young Women's Association is the May Night Carnival.

The association has a well furnished rest room in which their meetings are held and where, at any time during the week, the girls are welcome to go for rest or study.

DETAILED OUTLINE COURSES OF STUDY

Sub-Freshman Department

In this department the student is given a strong course preparatory for entrance to the Freshman Class of the College. The work is based upon accredited common and high school courses of study.

Sub-Freshman Year

FALL TERM	WINTER TERM	SPRING TERM
Algebra 5	Algebra 5	Algebra 5
English 5	English 5	English 5
Physical Geography 4	Physiology 4	Physiology 4
Bookkeeping or Latin 5	Civics or Latin 5	Arithmetic or Latin 5
Spelling and Writing ..... (2)	Spelling and Etymology (2)	Spelling and Etymology (4)

AGRICULTURAL DIVISION

There are six distinct courses of instruction in the Agricultural Division: 1, the Regular Course; 2, the Two-Year Course; 3, the Short Course for Farmers; 4, the Reading Course; 5, the Special Dairy Course in Buttermaking; 6, the Cotton-Grading Course The courses of instruction in this division are designed to afford scientific training and practical knowledge to young men who expect either to follow agriculture as a life work, or to prepare themselves as instructors of others therein.

SUBJECTS AND HOURS

**Freshman Year*

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Geometry 5	Geometry 5	Geometry 5
Algebra 4	Algebra 4	Physics 5
General History 4	General History 4	Public Speaking ..... (2)
Drawing or Woodwork (4)	Drawing or Woodwork (4)	Botany 3 (4)
Stock Judging ..... (4)	Stock Judging ..... (4)	

Sophomore Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)
Agricultural Physics 4 (2)	Soils 3 (4)	Farm Crops 3 (2)
Breeds 2 (2)	Breeds 2 (2)	Breeds 2 (2)
Farm Dairying 3 (4)	Grain Judging 1 (2)	Weeds 1 (2)
	Vegetable Garden and Small Fruits 4	Orchard Fruits 3 (2)

* The fall and winter terms of this year are common to all regular College courses.

Junior Year

Animal Physiology....3 (4))	Zoology 3 (4)	Animal Parasites 2
Plant Physiology 3 (4)	Plant Pathology 2 (2)	Entomology 2 (4)
Organic Chemistry 3 (4	Prin. of Breeding....3	Prac. of An. Breeding 2 (2)
Special Farming 1	Soil Physics or Dairy-	Syst. Botany 1 (4)
Elective....5	ing or Anatomy....3 (4)	Feeds and Feeding 4
	Elective....5	Elective 5

****Junior Electives**

German....4	German....4	German....4
Economics....4	Economics....4	Sociology....4
English....5	English....5	English....5

Senior Year

The Freshman, Sophomore and Junior years are the same in the regular Agricultural Course, and specialization towards Agronomy, Animal Husbandry, Dairying and Horticulture is provided for in the Senior year as scheduled below:

Course in Horticulture

Bacteriology 3 (4)	Rural Economy....2	Thesis ....(10)
Agri. Chemistry 3 (4)	Agri. Journalism 3	Plant Breeding 2 (2)
Rural Economy....2	Col. & Ex. Sta. Work 3 (4)	Landscape Gardening2 (2)
Forestry 2 (2)	Pomology 3 (4)	Business of Fruit and
Elective....5	Elective 5	Vegetable Growing....2
		Nursery Work....2
		Elective....5

Course in Agronomy

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 3 (4)	Soil Fertility 4 (2)	Soil Fertility 4 (2)
Agri. Chemistry 3 (4)	Rural Economy....2	Adv. Crop Breeding....2 (2)
Rural Economy 2	Agri. Journalism 3	Business of Seed and
Forestry 2 (2)	Col. & Ex. Sta. Work 3 (4)	Crop Growing 2
Elective 5	Elective....5	Thesis ....(10)
		Elective 5

Course in Dairying

Bacteriology 3 (4)	Rural Economy 2	Sp. Dairy Products 2 (2)
Agri. Chemistry 3 (4)	Agri. Journalism 3	Dairy Engineering....2
Rural Economy 2	Cheese Making 2 (6)	Business of Dairying....2
Butter Making....2 (6)	Factory Management 2	Dairy Farming 3
Elective....5	Ex. Sta. & Col. Work 3 (4)	Thesis ....(10)
	Elective 5	Elective 5

Course in Animal Husbandry

Bacteriology 3 (4)	Materia Medica 3	Common Diseases....2 (2)
Agri. Chemistry 3 (4)	Stables & Equipment 2	Business of Live Stock
Rural Economy 2	Agri. Journalism....3	Production 2
Adv. Live Stock Judg-	Live Stock Manage. 4 (2)	Ex. Sta. & Col. Work 3 (4)
ing 1 (4)	Rural Economy....2	Thesis ....(10)
Elective....5	Elective 5	Elective....5

****Senior Electives**

Maj. Agri. Subjects....5	Maj. Agri. Subjects 5	Maj. Agri. Subjects....5
Music 4	Music 4	Music 4
English....5	Bacteriology 2 (4)	Bacteriology 2 (4)
Commercial Usages 4	English 5	English 5
Botany 3 (4)	Botany 3 (4)	Botany 3 (4)
German 4	Embryology 2 (4)	Government 4
Entomology 3 (4)	German....4	German....4
		Entomology 3 (4)

** Students must elect up to 18 hours per week and not more than 23 hours.

ENGINEERING DIVISION

These courses are intended to prepare young men for positions of usefulness and responsibility in the mechanical, civil, and electrical engineering professions. The early part of the course is devoted to a thorough grounding in English, mathematics, and physics, mechanical drawing and shop work also being given. The last two years are devoted to the higher mathematics and to the more technical engineering studies.

Course in Mechanical and Electrical Engineering

SUBJECTS AND HOURS

**Freshman Year*

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Geometry 5	Geometry 5	Geometry 5
Algebra 4	Algebra 4	Physics 5
History 4	History 4	Pattern Making and Foundry ..... (10)
Drawing or Woodwork (4)	Drawing or Woodwork (4)	Public Speaking ..... (2)
Stock Judging or Domestic Science (4)	Stock Judging or Domestic Science (4)	

Sophomore Year

Trigonometry 5	Analytics 3	Analytics 3
English 4	English 4	English 4
Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)
Mechanical Drawing ..... (6)	Des. Geometry 4 (2)	Des. Geometry 3 (2)
Mechanics ..... (3)	Mechanical Drawing ..... (6)	Surveying ..... (4)
		Mechanical Drawing ..... (4)

Junior Year

Physics 4	Physics 3 (2)	Physics 4 (4)
Calculus 4	Calculus 4	Calculus 4
Kinematics 2	Applied Mechanics 5	Applied Mechanics 4
Mechanics 2	Steam Engines 3	Steam Engines 3
Steam Engines 3	Machine Shop ..... (8)	Machine Shop ..... (6)
Mechanical Drawing ..... (4)		
Blacksmith Shop ..... (6)		

Senior Year

Machine Design 4 (4)	Machine Design 3 (6)	Machine Design 5
Electrical Eng. 4 (6)	Electrical Eng. 4 (4)	Electrical Eng. 3 (2)
Commercial Usages 4	Elec. Light and Power 4	Contracts and Specif. 3
*Strength of Material 3 (2)	Thermodynamics 4	Heat & Vent., or Telephone & Tel. Eng 4
		Thesis ..... (8)

Course in Civil Engineering

Freshman and Sophomore years same as course in Electrical and Mechanical.

Junior Year

FALL TERM	WINTER TERM	SPRING TERM
Physics 4	Physics 3 (2)	Physics 4 (4)
Calculus 4	Calculus 4	Calculus 4
Railroad Curves 2 (4)	Graphics 1 (4)	Graphics, Roofs ..... (6)
Mechanics 2	Applied Mechanics 5	Applied Mechanics 4
Blacksmith Shop ..... (6)	Roads and Pavements 3	Irrigation Engineering 3
Topograph. Survey 2 (4)	Retain. Walls & Dams ..... (2)	

Senior Year

Electrical Eng 4 (6)	Electrical Eng. 4 (4)	Bridge Design ..... (8)
*Strength of Materials 3 (2)	Sanitary Engineering 4	Water Supply 4
Commercial Usages 4	Masonry 4	Contracts and Specifications 3
Hydraulics 3	Railroad Engineering 2	Reinforced Concrete 3
Bridge Stresses 1 (4)	Bridges ..... (8)	Railroad Engineering 2
		Thesis ..... (8)

* The fall and winter terms of this year are common to all regular College courses.

Course in Architectural Engineering

Freshman and Sophomore year same as course in Electrical and Mechanical

Junior Year

FALL TERM	WINTER TERM	SPRING TERM
Physics 4	Physics 3 (2)	Physics 4 (4)
Calculus 4	Calculus 4	Calculus 4
Wood Construction 5	Applied Mechanics 5	Heating and Vent. 4
Mechanics 2	Graphics ..... (4)	Applied Mechanics 4
Requirements & Planning of Buildings 5	Retain. Walls & Dams 2	Graphics, Roofs ..... (6)
	History of Architecture 3	

Senior Year

Electrical Eng 4 (6)	Bridges ..... (8)	Bridge Designing ..... (8)
†Strength of Materials 3 (2)	Masonry 4	Contracts and Specif 3
Commercial Usages 4	Arch. Eng. Problems 5	Reinforced Concrete 3
Plumbing 2	Estimates 3	Arch. Eng. Seminar 3
Building Materials 2	Thesis ..... (8)	Office Building Const 4
Bridge Stresses 1 (4)		Thesis ..... (8)

†Students graduating in 1910 will take Calculus, four hours, instead of Strength of Materials.

DOMESTIC SCIENCE AND ARTS DIVISION

This course is carefully planned to afford valuable instruction in the science and art of homemaking. English and foreign languages are provided; history, mathematics, social observances, drawing and art work are offered as educative subjects of general value and cultural worth. Chemistry, zoology, botany, physiology, bacteriology, physics and sanitation form the scientific basis for the applied subjects in the course, such as hygiene, cooking, nursing, cutting and fitting, designing, etc.

SUBJECTS AND HOURS

Freshman Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Geometry 5	Geometry 5	Geometry 5
Algebra 4	Algebra 4	Physics 5
General History 4	General History 4	Botany 3 (4)
Drawing ..... (4)	Drawing ..... (4)	Drawing ..... (2)
Domestic Science ..... (4)	Domestic Science ..... (4)	Domestic Science ..... (4)

Sophomore Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
German or Latin 4	German or Latin 4	German or Latin 4
Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)
Drawing 1 (2)	Drawing 1 (2)	Drawing 1 (2)
Zoology 3 (4)	Hygiene 1	Sanitation 1
Basketry ..... (2)	Textiles 1	History of Costume 2
	Theory of Cooking 1	Theory of Cooking 1
	Cooking ..... (4)	Cooking ..... (4)
	Basketry ..... (2)	

Junior Year

FALL TERM	WINTER TERM	SPRING TERM
English 5	English 5	English 5
Organic Chemistry 3	Public Speaking ..... (2)	Psychology 5
Boany 3 (4)	Drawing 2 (2)	Household Entomol. 2 (4)
Advanced Physiology 3 (4)	Cutting and Fitting ..... (4)	Suit Making ..... (4)
Drafting ..... (2)	Cooking ..... (2)	Cooking ..... (2)
Cooking ..... (2)	Theory of Cooking 1	Theory of Cooking 1
Theory of Cooking 1	Social Observances 2	Drawing 2 (2)
Social Observances 1	House Furnishing 2	Wood Carving ..... (2)
	Wood Carving ..... (2)	

Senior Year

FALL TERM	WINTER TERM	SPRING TERM
English 5	English 5	English 5
Home Nursing 2	Home Economics 2	Thesis 6
Home Economics 2	Advanced Handwork (2)	History of Foods 2
Advanced Handwork (2)	Advanced Cooking ..... (2)	School Equipment 1
Invalid Cooking 2 (2)	Architecture 2 (4)	Advanced Handwork ..... (2)
Bacteriology 3 (4)	Embryology 2 (4)	Chemistry of Food ..... (2)
	Women's Work and Wages 2	Landscape Gardening 2 (2)
	Theory of Teaching Domestic Science 1	Women's Work and Wages 2
		Theory of Teaching Domestic Science 1

SCIENCE AND LITERATURE DIVISION

This course is arranged with the purpose, first, of offering a good general and practical education along scientific and literary lines; second, of giving major work in several of the departments of applied science. After the Sophomore year abundant privilege of election is offered, allowing the student considerable opportunity for specialization.

SUBJECTS AND HOURS

**Freshman Year*

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Geometry 5	Geometry 5	Geometry 5
Algebra 4	Algebra 4	Physics 5
General History 4	General History 4	Public Speaking (Men) ..... (2)
Drawing or Woodwork (4)	Drawing or Woodwork (4)	Botany 3 (4)
Stock Judging or Domestic Science ..... (4)	Stock Judging or Domestic Science ..... (4)	Dom. Science (Women (4)

Sophomore Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)
German 4	German 4	German 4
Zoology 3 (4)	American History 4	American History 4

***Sophomore Electives*

Trigonometry 5	Analytical Geometry 3	Analytical Geometry 3
English History 3	Geology 4 (2)	Astronomy 4
Music 2 (4)	Music 2 (4)	Music 2 (4)
Latin 4	Latin 4	Latin 4
	Domestic Science 4	Domestic Science 4

* The fall and winter terms of this year are common to all regular College courses.

** Students must elect up to 18 hours per week and not more than 23 hours.

Junior Year

Physics 4	Physics 3 (2)	Biology 2 (4)
English or German 5	English or German 5	English or German 5

****Junior Electives**

Plant Physiology 3 (4)	Plant Path. and Hist. 2 (6)	Cryptogamic Botany 2 (6)
Theor. Chemistry 3 (4)	Organic Chemistry 3 (4)	Organic Chemistry 3 (4)
Adv. Physiology 3 (4)	Histology 3 (4)	Suit Making ..... (4)
Cooking 1 (2)	Cutting and Fitting ..... (4)	Cooking 1 (2)
Drafting ..... (2)	Cooking 1 (2)	Social Obser. ..... (2)
Social Observances 1	Social Obser. 2	Latin 4
Music 2 (4)	Music 2 (4)	Music 2 (4)
Latin 4	Latin 4	Psychology 5
Economics 4	Economics 4	Sociology 4
Calculus 3	Calculus 4	Surveying ..... (4)
English 5	Public Speaking ..... (2)	Physics 4 (4)
German 5	English 5	Calculus 4
	German 5	Physical Chemistry 3 (4)
		English 5
		German 5
		Entomology 2 (4)

Senior Year

Commercial Usages 4

****Senior Electives**

Bacteriology 3 (4)	Bacteriology 2 (4)	Bacteriology 2 (4)
Botany 3 (4)	Botany 3 (4)	Botany 3 (4)
English 5	English 5	English 5
German 4	German 4	German 4
Music 2 (4)	Music 2 (4)	Music 2 (4)
Latin 5	Latin 5	Latin 5
Agricultural Chem. 3 (4)	Industrial Chemistry 3 (4)	Industrial Chemistry 3 (4)
Mineralogy 4	Metallurgy 3 (2)	Government 4
European History 4	European History 4	Thesis ..... (10)
Forestry 3	Embryology 2 (4)	Entomology 3 (4)
General Chemistry 2 (6)		
Entomology 3 (4)		

TEACHERS' NORMAL DIVISION

This course is designed for those who intend to teach in the common and high schools, and especially for those who desire to become expert teachers of some one or more of the scientific or industrial departments of education. Oklahoma has the most progressive school laws with reference to applied science of any state and the demand for well trained teachers is constantly growing. The "common branches" (arithmetic, history, English language, music, algebra, physics, botany, chemistry, etc.), are taught as foundation subjects and on these the "professional subjects" (pedagogy, psychology, history of education, methods and management, etc.), and the industrial subjects (woodworking, stock judging, soils, and domestic science), are builded for the education and training of the strong, well balanced teacher.

** Students must elect up to 18 hours per week and not more than 23 hours.

SUBJECTS AND HOURS

*Freshman Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Geometry 5	Geometry 5	Geometry 5
Algebra 4	Algebra 4	Physics 5
General History 4	General History 4	Public Speaking (Men) (2)
Drawing or Woodwork (4)	Drawing or Woodwork (4)	Botany 3 (4)
Stock Judging or Domestic Science (4)	Stock Judging or Domestic Science (4)	Dom. Science (Women (4)

*Sophomore Year

FALL TERM	WINTER TERM	SPRING TERM
English 4	English 4	English 4
Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)	Inorganic Chemistry 3 (4)
Zoology 3 (4)	American History 4	American History 4
Elementary Agriculture 3	Domestic Science 4	Domestic Science 4

**Sophomore Electives

German 4	German 4	German 4
Farm Dairy 3 (4)	Soils 3 (4)	Farm Crops 3 (2)
Trigonometry 5	Analytical Geometry 3	Analytical Geometry 3
English History 3	Geology 4 (2)	Astronomy 4
Music 2 (4)	Music 2 (4)	Music 2 (4)
Latin 4	Latin 4	Latin 4
	Vegetable Gardening and Small Fruits 4	

*Junior Year

FALL TERM	WINTER TERM	SPRING TERM
History of Education 5	Methods and Manage 5	Psychology 5
Music 3	Music 3	Music 3

**Junior Electives

Plant Physiology 3 (4)	Plant Path. & Hist. 2 (6)	Cryptogamic Botany 2 (6)
Theor. Chemistry 3 (4)	Organic Chemistry 3 (4)	Organic Chemistry 3 (4)
Adv. Physiology (2)	Histology 3 (4)	Suit Making (4)
Cooking 1 (2)	Cutting and Fitting (4)	Cooking 1 (2)
Drafting (2)	Cooking 1 (2)	Social Observances (2)
Social Observances 1	Social Observances 2	Latin 4
Latin 4	Latin 4	Sociology 4
Economics 4	Economics 4	Surveying (4)
Calculus 3	Calculus 4	Physics 4 (4)
Physics 4	Public Speaking (2)	Calculus 4
English 5	Physics 3 (2)	Physical Chemistry 3 (4)
German 5	English 5	Biology 2 (4)
Farm Dairy (Soph.) 3 (4)	German 5	English 5
	Prin. of Breeding 3	German 5
	Soil Physics 3 4)	Feeds and Feeding 5
	Soils (Soph.) 3 (4)	Farm Crops (Soph.) 4 (2)

*Senior Year

FALL TERM	WINTER TERM	SPRING TERM
Theory and Practice 3 (4)	Theory and Practice (4)	Phil. of Education 3
	History and Constitution of Oklahoma 3	Public School Music 2

* The fall and winter terms of this year are common to all regular College courses.
** Students must elect up to 18 hours per week and not more than 23 hours.

**Senior Electives

Bacteriology 3 (4)	Bacteriology 2 (4)	Bacteriology 2 (4)
Botany 3 (4)	Botany 3 (4)	Botany 3 (4)
General Chemistry ... 3 (6)	Metallurgy 3 (2)	English 5
Mineralogy 4	English 5	Government 4
English 5	European History 4	German 4
Forestry 3	German 4	Music 2 (4)
European History 4	Music 2 (4)	Latin 5
German 4	Embryology 2 (4)	Industrial Chemistry 3 (4)
Music 2 (4)	Latin 5	Landscape Gardening 2 (2)
Latin 5	Industrial Chemistry 3 (4)	Dairy Farming 3
Agricultural Chem. 3 (4)	Live Stock Man. 4 (2)	Thesis ..... (10)
Commercial Usages 4	Soil Fertility 4 (2)	

Teachers holding first and second grade certificates, not candidates for a degree, may take the professional work of this course as one year's work, and will receive upon its completion Normal School certificates or elementary state licenses to teach for three and two years respectively.

Normal School certificates or elementary state licenses for one year may be issued to students of any course who have completed the work through the Sophomore year, provided they can fulfill the requirements of the State law regarding the teaching of Agriculture, Domestic Science, Oklahoma History, Drawing and Public School Music in the public schools.

State certificates for life will be issued to graduates of the Normal Course, and to graduates of other courses who have completed the professional work as outlined in this course.

BUSINESS DIVISION

These courses enable many young men and women to become efficient salaried employes by providing instruction in the fundamental subjects of a general education and training them as expert accountants, stenographers and clerks.

Business Course

SUBJECTS AND HOURS

FALL TERM	WINTER TERM	SPRING TERM
Bookkeeping ..... (15)	Bookk'g & Banking .. (10)	Business Practice ..... (15)
Spelling 2	Spelling 2	Spelling 2
Penmanship ..... (3)	Penmanship ..... (3)	Penmanship ..... (3)
English 5	English 5	Bus. Correspondence 5
Arithmetic 5	Arithmetic 5	Rapid Calculation 5
	Commercial Law 5	

Course in Stenography

FALL TERM	WINTER TERM	SPRING TERM
I. Shorthand Theory .. 5	I. Dictation ..... (10)	I. Dic. & Office Prac. (10)
II. Dic. & Office Prac. (10)	II. Shorthand Theory .. 5	II. Theory & Dictation .. 5
III. Theory & Dictation 5	III. Dic. & Office Prac. (10)	III. Shorthand Theory .. 5
Penmanship 3	Penmanship 3	Penmanship 3
Spelling 2	Spelling 2	Spelling 2
Typewriting ..... (10)	Typewriting ..... (10)	Typewriting ..... (10)
English 5	English 5	Bus. Correspondence 5

** Students must elect up to 18 hours per week and not more than 23 hours.

DIVISIONS OF INSTRUCTION

The divisions of instruction are grouped and planned to suit the natural needs and desires of the students in attendance at this institution as indicated by the experience of the College for several years past. Formerly the studies offered by the several departments of the College were grouped into "Courses of Study". As a result of recent development and change these are now known as "Divisions" and their subdivisions are termed "Courses"; thus the Engineering Division has its Electrical Engineering Course, Mechanical Engineering Course, etc.

Under the present organization the studies of the College are grouped into the following divisions:

1. Agricultural Division.
2. Engineering Division.
3. Domestic Science and Arts Division.
4. Science and Literature Division.
5. Teachers' Normal Division.
6. Business Division.

The divisions above referred to indicate a natural grouping of student work as offered in the College, but do not refer to the grouping of the departments themselves in a physical or organic sense.

THE AGRICULTURAL DIVISION

JOHN A. CRAIG, *Director.*

The Courses in Agriculture:

1. The Regular Course.
2. Two-Year Course.
3. Short Course for Farmers.
4. Reading Course.
5. Special Dairy Course in Buttermaking.
6. Cotton-Grading Course.

Departments of Instruction in the Agricultural Division:

1. Department of Horticulture and Botany.
2. Department of Agronomy.
3. Department of Dairying.
4. Department of Animal Husbandry.
5. The Farm Department.
6. Department of Short Courses.

7. Departments of Investigation (the Agricultural Experiment Station).
   Veterinary.
   Animal Husbandry.
   Horticulture.
   Dairy.
   Entomology.
   Chemistry.
   Agronomy.

The subjects of the Agricultural Division are taught by the following departments:

The Department of Horticulture and Botany.
The Department of Agronomy.
The Department of Dairying.
The Department of Animal Husbandry.
The Farm Department.
The Department of Zoology and Veterinary Science. (See page 93.)
The Department of Mechanical and Electrical Engineering. (See page 77.)
The Department of English. (See page 96.)
The Department of German and Latin. (See page 98.)
The Department of Mathematics and Astronomy. (See page 100.)
The Department of Chemistry, Metallurgy, and Mineralogy. See page 101.)
The Department of Entomology. (See page 106.)
The Department of History and Political Economy. (See page 104.)

The Division of Agriculture of the Agricultural and Mechanical College embraces two main lines—instruction and investigation. While the work of instruction comes more directly under the College and the work of investigation and experiment under the Experiment Station, and while they are distinctly separate as far as the duties of each are concerned, yet they unite and the outcome is to more than double the strength of the instruction given both to the students and the farmers of our State. To describe more clearly the field of each, it will be best in this discussion to separate, in a general way, the work of the Division

of Agriculture into that relating to the College and that more specifically belonging to the Experiment Station; but it is to be remembered that the work of both is very closely associated and united on the common college ground of instruction to our students and farmers. This desirable result is further strengthened by the fact that the heads of the departments in the Agricultural Division are also members of the Station staff, so that the instruction given in the College has the benefit of the investigations and experiments of the Experiment Station.

For instruction and investigation purposes, the division is equipped with excellent lecture rooms, several laboratories, and an equipment which in some lines is very complete. Where it is not as strong as we would like it to be, it is becoming possible by the liberality of the Legislature to extend its efficiency very rapidly. The farm consists of about one thousand (1000) acres of both rolling and bottom land, affording excellent land for the care of all cultivated crops, as well as pasture land, that is in every way satisfactory. A careful selection of live stock is also a part of the equipment. An appropriation of $11,500 made available by the Second Legislature and the general government will enable us to strengthen this feature greatly. A creamery fully equipped and being operated very successfully commercially is another valuable feature of our equipment. Two greenhouses are now a part of the equipment, and $5000 is available for the building of two more at once. At present the farm has a good horse and cattle barn. Another farm barn, badly needed, which will be ultimately devoted largely to dairy cattle, has been provided for by the appropriation of $10,000 by the Legislature of this year, and this will be made to some extent illustrative of the most sanitary modern equipment for dairy barns. Another very essential addition to our equipment will be provided for by the erection of an animal husbandry building largely for stock judging purposes at a cost of $15,000. This building will contain an ample ampitheater for showing and judging live stock under cover. A piggery is now under construction, which though used largely for experimental work, will enable us to take such care of our pure bred hogs as they should have to attain highest merit. With all these live stock lines and field crop features so liberally provided for we hope to have an equipment in animal

husbandry, agronomy and horticulture which will add very materially to the excellence of the instruction which may be imparted to our students, and which will greatly strengthen the reliability of all experimental work to be conducted in the future.

Every effort is being made to bring the Agricultural Division of the College into close and useful relations with the agricultural interests of our State. In this connection it is gratifying to refer to the helpful relations existing between the College and the Secondary District Agricultural Schools, though these have an independent organization. Aiding further in our extension work are the "Department of Agriculture for the Public Schools", and the "Department of Short Courses" and the "Farmers' Co-operative Experiment Association". In these ways and through the issuing of bulletins to the press and the sending forth of lecturers the extension work of the College is broadening into lines that will soon become extremely useful and valuable to the rural interests of Oklahoma.

The Courses in Agriculture

1. The Regular Course.—The regular course, which covers four years, embraces as major studies Agronomy, Animal Husbandry, Dairying and Horticulture. The Freshman year of this course is the same as that for all other students in the College. The Sophomore year includes intensely practical subjects relating to Agriculture. All the students in the Agricultural Division take the same work in the Sophomore year. In the Junior year the students are given some latitude, and are permitted to specialize to a slight extent in either of the major studies which have been mentioned. In the Senior year the specialization is complete.

This course has been arranged so as to enable those who complete it to farm successfully as well as to equip them to fill positions relating to the several lines in which they have specialized.

The schedule of the subjects taught in the regular course, with the hours each week assigned to each, is given with all the other regular courses of the College in the fore part of this Catalog.

2. The Two Years' Course.—This course is arranged with the purpose of giving the most practical instruction in Agriculture in the shortest possible time. It is arranged to furnish training

of special value to those boys and girls, young men and young women who intend to stay on the farm. It has been planned to include a season when the farm work will permit of absence for instruction in farm topics. Applicants must be at least fifteen years of age, and fairly well advanced in the common branches. To meet the conditions of many young men and young women in the country the course is arranged to begin about October 15, when the fall work on the farm ceases to be pressing, and to close about March 15, when the services of the student are again likely to be needed at home. For the fall season of 1909 this Short Course opens October 11.

The Short Course provides thorough instruction in writing, arithmetic, English language, public speaking, music and physiology, as well as the practical subjects such as engines and boilers, carpentry, farm machinery, soils, stock judging, blacksmithing, and sewing for girls.

SUBJECTS AND HOURS

First Year

FALL TERM		WINTER TERM	
Arithmetic	5	Arithmetic	5
English and Writing	5	English and Writing	5
Botany	2 (2)	Physiology	4
Horticulture	2 (2)	Farm Accounts	2
Farm Machinery or Cooking	2 (2)	Soils or Cooking	2 (2)
Music or Public Speaking	(2)	Music or Public Speaking	2 (2)
Carpentry or Sewing	(4)	Blacksmithing or Sewing	(4)
Engines and Boilers	(2)		

Second Year

FALL TERM		WINTER TERM	
Dairying	2 (2)	Farm Management	4
Entomology	2 (2)	Animal Feeding and Management	5
Live Stock, Poultry and Bees	5 (4)	Veterinary Medicine or	(4)
Physical Geography	4	Cooking	2 (2)
Farm Crops or	4 (2)	Sanitation	2
Cooking	2 (2)	Civics and Sociology	3
Music or Public Speaking	(2)	Music or Public Speaking	(2)
Sewing	(4)	Drawing	(2)
		Sewing	(4)

3. THE SHORT COURSE FOR FARMERS.—The Short Course for Farmers, lasting for one week, will be given at some time during the month of January. The dates and program will be announced later. For each of the last three years more than four hundred farmers of Oklahoma have attended this course.

4. THE READING COURSE IN AGRICULTURE.—This course has been carefully arranged, and affords the willing student an opportunity to do systematic work in agricultural studies at home.

Experts are in charge of each of the several divisions of the course. Write for further information.

5. SPECIAL DAIRY COURSE IN BUTTERMAKING.—A special course in creamery buttermaking is offered, beginning January 6th (1st Tuesday in January) and continuing for four weeks. Lecture and text-book work are given daily in the morning session and practical work in the creamery in the afternoon. The following schedule explains the course fully and the work offered:

8:00 A M.—Text-book lessons on buttermaking.
9:00 A. M.—1st two weeks—lectures on feeds, feeding, breeding, care and diseases of dairy cattle
2nd two weeks—lectures on engines, boilers and creamery machinery.
10:00 A. M.—Creamery bookkeeping and creamery accounting.
1 to 5 P. M.—Practical work in churning, testing, pasteurizing, use of the starter.

This course is designed for managers of creameries, for buttermakers, and persons who have had some experience in creamery work. It has been greatly appreciated by our progressive dairymen. Others of less experience who intend to take up creamery work may obtain a great deal of information from it.

For further information write to the A. & M. College, Stillwater, Okla.

6. COTTON-GRADING COURSE.—Four weeks, beginning July 12th and ending August 7, 1909.

The purpose of this course is to supply the instruction demanded by growers, ginners, merchants, and others who are particularly anxious to secure a better knowledge of cotton grades and valuations. One of the chief aims of the course is to make prominent the fact that careless methods of planting, seed selection, gathering, ginning, and marketing must be changed, so that Oklahoma may compete with other cotton-growing regions in the economical production of a superior quality of cotton. It is recognized that there are possibilities for improvement at each stage of handling, from the preparation of the ground until the crop is sold and delivered to the consumer. The instructors who have given these subjects expert study will readily give the students the benefit of their experience, so that any one taking the

course may easily become better equipped to make his business more profitable and at the same time benefit the community materially.

The general plan of the course is to confine the first part of the instruction to the producers, covering in a general way the topics of growing and marketing, while the second portion will chiefly be devoted to the ginners and dealers, covering in a broad way the subjects of ginning and shipping. The lectures on these lines will occupy the forenoon (from 9 to 12) of each day during the whole course, and in the afternoon of each day (from 2 to 4 p. m.) cotton grading will occupy the attention of the classes. This will include instruction in the use of the score card, with the description of the various classes of cotton and their valuation. The exact schedule of the course is issued as a special pamphlet giving full details of all features of this work.

Department of Horticulture and Botany

O. M. MORRIS, *Professor*
L. M. MONTGOMERY, *Assistant*

This department now occupies rooms in Morrill Hall with abundant class and laboratory room and a full equipment for laboratory and photographic work. It is equipped with a complete line of garden seeders; tools for lawn work; spray pumps; a large collection of models of common varieties of apples, peaches, plums, pears, cherries and such fruits; charts showing the diseases of fruits and garden plants; and a herbarium of cultivated plants showing most of the plants cultivated in the United States. In the way of practical operations, this department is well situated, having at its command the orchards of the Experiment Station and greenhouse facilities. The horticultural grounds include 60 acres with more than 40,000 trees and vines. For instruction in forestry, a plantation of 40,000 trees is available both for observation and for practical work in propagation, pruning, and transplanting. The equipment of the botanical laboratory includes 23 compound microscopes for regular work; a number of compound microscopes designed for special purposes; 24 simple microscopes, and a large assortment of lenses; 2 large microtomes and a number of small microtomes; camera lucida;

photo-micrographic cameras and accessory apparatus; several hundred microscopic preparations for simple plants and plant tissue and pathological specimens for special study; a good assortment of chemicals and glassware; and sufficient apparatus for the study of plant physiology. The herbarium contains a large collection of fungi, algae, and lichens. The botanical collection of the Experiment Station is also accessible for reference. A good collection of Auzoux models illustrated anatomically of the flower and fruits of typical agricultural plants, and a set of Kny botanical charts; a set of Peter botanical charts; and a collection of woods; fibers, and seeds of economical, medicinal, and agricultural plants is at hand for illustration work both in class and laboratory. There is a small collection of hardy herbs, shrubs, and trees on the College grounds from which material may be obtained for class study and uses.

SUBJECTS

GARDEN VEGETABLES AND SMALL FRUITS.—Sophomore year, winter term.

The general and specific character of vegetables and small fruit plants is studied as a basis of the study of the methods of growing and marketing the crop. Four lectures per week. (Professor Morris.)

ORCHARD FRUITS.—Sophomore year, spring term.

This is a study of the orchard fruits grown in Oklahoma and the best methods of cultivating and marketing them.

FORESTRY.—Senior year, fall term.

This is a study of the best trees for planting in Oklahoma for the purpose of growing fuel, fence posts, and windbreaks, and the best methods of planting and cultivating tree plantations. Three lectures and one practice per week. (Professor Morris.)

POMOLOGY.—Senior year, winter term.

This is a systematic study of the varieties of orchard fruits. Material for class use is purchased in the fall and kept in cold storage until the class is ready to use it. Three lectures and two practices per week. (Professor Morris.)

PLANT BREEDING.—Senior year, spring term.

Study and practice of plant breeding and plant selection as it applies to horticultural plants is taught with a view to giving the student a knowledge of the best methods of plant improvement. Two lectures and one practice per week. (Professor Morris.)

NURSERY WORK.—Senior year, spring term.

This is a study of the methods of propagating plants and methods of nursery management. Two lectures per week. (Professor Morris.)

BUSINESS OF FRUIT AND VEGETABLE GROWING.—Senior year, spring term.

This is a study of the market requirements in the line of fruits and vegetables and of the best methods of meeting those requirements. This course is based upon the practice and experience of the most successful fruit growers and truck gardeners. Two lectures per week. (Professor Morris.)

LANDSCAPE GARDENING.—Senior year, spring term.

The fundamental principles of landscape gardening are taught and practice is given in making the plans for home grounds. Two lectures and one practice per week. (Professor Morris.)

ELEMENTARY BOTANY.—Freshman year, spring term.

A study of plant forms and phenomena illustrated with live plant material occupies the first six weeks of the term. The remainder of the term is spent in preparing a herbarium and identifying plants. Three lectures and two practices per week. (Mr. Montgomery.)

WEEDS.—Sophomore year, spring term.

This is a study of weeds and weed seeds for the purpose of enabling the students to identify and eradicate noxious weeds. One lecture and one practice per week. (Mr. Montgomery.)

PLANT PHYSIOLOGY AND HISTOLOGY.—Junior year, fall and winter term.

This course includes a study of the phenomena of plant growth, of the relation of plant growth and life to water and food supply, to excessive and under supply of heat, light and air, and of the cells and tissues of plants and their course of development in structure and organs. Three lectures and two practices fall term; two lectures and three practices winter term. (Professor Morris.)

BOTANY—PLANT PATHOLOGY.—Junior year, winter term.

The disease of the agricultural plants and methods of controlling them are studied with the most common diseases as the foundation material. Two lectures and one practice per week. (Professor Morris.)

SYSTEMATIC BOTANY.—Junior year, spring term.

This is a study of the plant families most important to agriculture and the identification of species belonging to these families. One lecture and two practices per week. (Mr. Montgomery.)

Cryptogamic Botany.—Junior year, spring term.

This is a study of the lower forms of plant life. The major portion of the time is devoted to the study of fungi. Two lectures and three practices per week. (Mr. Montgomery.)

Systematic Botany.—Senior year, fall term.

Identification and classification of flowering plants native of Oklahoma. Three lectures and two practices per week. (Mr. Montgomery.)

Plant Cytology.—Senior year, winter term.

The fertilization of flowers and the formation of the plant cell. Three lectures and two practices per week. (Mr. Montgomery.)

Plant Morphology.—Senior year, spring term.

A study of the form and classification of plants from the standpoint of evolution. Three lectures and two practices per week. (Mr. Montgomery.)

Moulds and Mildews.—Junior year, fall term.

Moulds and mildews that occur in the household, their effects on food, methods of prevention, etc. Three lectures and two practices per week. (Mr. Montgomery.)

Horticulture.—First year, short course, fall term.

Instruction in the practical work of fruit growing in Oklahoma. Two lectures and one practice per week. (Mr. Montgomery.)

Botany.—First year, short course, fall term.

A brief study of how plants obtain their food and how they respond to extremes of temperature and moisture. Two lectures and one practice per week. (Professor Morris.)

Department of Agronomy

L. A. Moorhouse, *Professor*
W. L. Burlison, *Assistant*
J. A. Ratcliff, *Assistant*

The courses of instruction which are offered in Agronomy include those studies that are directly related to the production of farm crops. Agricultural physics and farm machinery form a fundamental part of the class exercises during the Sophomore year; the principles involved in the construction of tillage implements and harvesting machinery are studied not only from the standpoint of pure science, but they are also considered from a practical point of view. Other courses follow in logical order.

First, the student learns to trace the effect of certain agencies like water, air, and frost on rock structure, and later he observes that the soil types which are common to a given locality are made up largely of disintegrated rock. Soils may be formed in place, or they may be made up of materials which have been transported many miles. The physical and chemical properties of the soil are features which are reviewed carefully and systematically. The course in soil physics embraces such topics as, the conservation of soil moisture; the influence of organic matter upon the storage of moisture; the importance of securing good texture or tilth; the necessity of air to plant growth, and the influence of soil temperature in germination and growth. The course in soil fertility gives the student an opportunity to compare the productive qualities of different types of soil, and by noting the influence which is exerted through the application of materials carrying one or more of the essential plant food elements, to make definite recommendations for special soil areas. The staple crops of Oklahoma also receive due attention. In these courses a review is made of the history of each plant; its adaptations; varieties or types; methods of culture; uses and problems connected with the marketing of each product.

The department occupies several laboratories in Morrill Hall, and the instructional work which has been mentioned is given in this building. The farm machinery laboratory is equipped with up-to-date machinery, such as plows, cultivators, grain drills, mowers, binders and other respective types. An additional room is used for farm power machines, and several types of gasoline engines are available for laboratory practice. Practically all of the material which has been set up in these laboratories was loaned to the department about two years ago by several of our leading machine companies. A few new pieces will be added this year; hence the most important types of farm implements will be at the disposal of the student. The seed-testing laboratory is located in the basement of Morrill Hall, and it is provided with germinating boxes, balances, and the necessary material for testing seeds. The crop museum is located on the third floor of the building, and it contains four large cases which serve as storage space for exhibition specimens of grasses and grains. The instructional work in corn judging and seed selection is given in

this room. The soil-physics laboratory which is located on the third floor is supplied with the necessary apparatus for making studies in capillary movements of soil moisture, aeration, and the mechanical composition of the soil. The field tests with different varieties of grain and forage crops which are under way on the Station farm afford excellent facilities for the study of special types together with the effect of different methods of soil culture and soil fertilization.

SUBJECTS

Agricultural Physics.—Sophomore year, fall term.

Principles of physics with reference to the construction of farm machinery and farm buildings are presented in this course. Practice will be given in setting up and in making a detailed investigation of the working parts of tillage implements and harvesting machines. Gasoline engines have been provided for illustrative purposes; thus the class will have an opportunity to get a working knowledge of this much-used farm-power machine. Text: Physics of Agriculture—King. (Mr. Burlison.)

Soils.—Sophomore year, winter term.

This study comprises a review of the origin of soils and the agencies which are at work in soil formation, together with a study of the physical properties of the soil; such as weight, texture, color relation to moisture, air, gases, and dissolved solids; of organic matter and its importance, more particularly with reference to the physical structure of the soil; of soil erosion and methods of preventing the same; of alkali lands and their management, of dramage and irrigation. The objects and methods of soil tillage are also considered. The class work is supplemented by laboratory exercises in the study of soil types; specific gravity of soils; hygroscopic, capillary and gravitational moisture, and absorbtive power of different types. Texts: The Soil—A. D. Hall; Laboratory Manual—Mosier. (Professor Moorhouse.)

Grain Judging.—Sophomore year, winter term.

Corn judging is one of the major features of this course; samples of cotton are also measured by the standard commonly known as the score card. While the score card cannot be taken as an absolute guide in the selection of seed for breeding purposes, at the same time the adopted method does assist in directing the attention of the student to important and minor differences in seeds. In the examination of market classes and grades of grain the student applies the rules which have been adopted by the Board of Railroad and Warehouse Commissioners for the inspection of grain at Chicago. Text: Examining and Grading Grains —Lyom & Montgomery. (Mr. Burlison.)

FARM CROPS.—Sophomore year, spring term.

This course includes a study of the staple field crops of Oklahoma. The groups which are represented are: cereals, grasses, legumes, forage crops, tubers, roots, sugar plants, fiber plants, and miscellaneous crops. In making a review of the more prominent types within the several groups the following points are considered: the history of the crop, the structure and botanical relations of each plant, the classification of varieties, the improvement of varieties through selection and breeding, adaptation to special soil and climatic conditions, cultural methods, harvesting, preservation and marketing. Texts: The Cereals in America—Hunt; The Forage and Fiber Crops in America—Hunt. (Mr. Burlison.)

SOIL PHYSICS.—Junior year, winter term.

This is a continuation of the course designated "Soils". The physical constitution of soils, methods of making a mechanical analysis, the relation of texture to moisture-holding capacity, the percolation of water through soils, the water-holding capacity of soils. The capillary rise of moisture in soils; lateral movements of capillary moisture, the effect of mulches upon the rate of evaporation, and observations with reference to the effect of discing, harrowing, rolling, time and depth of cultivation are subjects which receive attention in this course, and they will serve to indicate the nature as well as the purpose of advanced studies in soil physics. Texts: Physical Properties of the Soil—Warington; Laboratory Guide—McCall. (Professor Moorhouse.)

ADVANCED CROP BREEDING.—Senior year, spring term.

The history and development of plant breeding in the realm of field crops are items which are traced from the very beginning; the most approved methods, such as the centgener system or the head-row system are compared; and new avenues in this untried science are explored. The most desirable characteristics in a new plant are: (a) High yield per acre; (b) Quality; (c) Disease resistance; (d) Drouth resistance. Text: Reports of the American Breeders' Association. (Professor Moorhouse.)

BUSINESS OF SEED AND CROP GROWING.—Senior year, spring term.

Crops which have come to occupy a prominent place on the Oklahoma farm are considered in turn from a commercial point of view. Indian corn, cotton, alfalfa, and the sorghums are crops of sufficient import to receive more than passing attention. The business of handling such crops must take into consideration such phases as the breeding plot, the general field selection, storage, packing for shipment, advertising. Text: Assigned readings. (Professor Moorhouse.)

SOIL FERTILITY.—Senior year, winter and spring terms.

This course embraces such topics as the natural fertility of the soil; the essential elements of plant production; the function of manures and fertilizers, with suggestions concerning their application, nitrogenous fertilizers, phosphates, potassic manures; lime and its uses; and miscellaneous fertilizing materials. The field tests which have been conducted by several of the most prominent

experiment stations are discussed in connection with a study of Oklahoma field trials; thus the principles that should be observed in planning soil fertility tests and managing this phase of the practical work of the farm become self-evident to the student. The class exercises are supplemented by pot culture experiments in the laboratory. Texts: Fertilizers—Voorhees; The Book of the Rothamsted Experiments—Hall; Laboratory Manual—Hopkins. (Professor Moorhouse.)

Department of Dairying

ROY C. POTTS, *Professor*
O. W. HOLMES, *Assistant*

A separate two-story brick building (60x30) is provided for this department. The buttermaking room is equipped with modern machinery, having a capacity of 3,000 pounds of creamery butter daily. The following is some of the machinery in this room: One No. 6 Disbrow churn and butter-worker combined, two 300 gallon cream ripeners, one 30 gallon starter can, refrigerator, printing tables, etc.

The testing room (15x25) is equipped with a 2-horse-power boiler, water heater, and one 32-bottle centrifugal steam Babcock tester.

A 10-horse-power Fairbanks-Morse horizontal gasoline engine furnishes the power for operating the machinery.

A torsion balance, sensitive balances, glassware and all necessary apparatus are provided for testing milk and cream, and determining adulterations of dairy products.

A laboratory room (15x25) is equipped with hand Babcock testers, also one 24-bottle steam power centrifugal tester and testing table to accommodate sixteen students.

The various makes of cream separators are studied and tested. Four outfits of farm dairy machinery, consisting of barrel, box and swing churns, also roller and lever butter-workers are available for use in farm dairy classes.

Small cheese vats, hoops, presses, and necessary apparatus for making cheese are provided.

The installing of pasteurizing, and ice cream machinery this year is contemplated.

Students electing work in this section of the Agricultural Division are given an opportunity during the summer vacation and at all times to secure thorough and practical training in all the

phases of dairy, factory and creamery work by directly engaging in the work, and a remuneration per hour is given to those employed

Students in this department can fit themselves for positions as superintendents and managers of creamery, ice cream, and dairy plants, or they may become dairy farmers, or take up governmental or college experimental work in dairying.

SUBJECTS

DAIRYING.—Sophomore year, fall term. Required of all agricultural students.

A study is made of the principles which apply to the producing and handling of dairy products in a wholesome and economical manner on the farm, the composition of milk and cream, and the conditions that affect it and bring about changes. Practical work in milk and cream testing, separating milk, ripening cream, churning, and preparing butter and milk for the market is given in the dairy room. Three lectures and two practices per week. Text: Milk and its Products—Wing. (Mr. Holmes.)

DAIRYING.—Junior year, winter term. An elective for Junior students intending to specialize in dairying during their Senior year.

This course consists of a series of lectures with supplemental reference and laboratory work. It includes the history of dairying in this and foreign countries, systems of dairying, co-operative dairying, factory organizations, creamery systems, factory equipments, dairy machinery, dairy legislation and literature, also the composition of dairy products. The laboratory work consists of exercises in testing milk and cream, detecting preservatives and adulterants, moisture testing of butter, standardizing of milk, analysis of butter and studies of commercial dairy products, Three lectures and two practices per week. Laboratory book: Dairy Laboratory Guide—Melick. (Professor Potts.)

BUTTER MAKING.—Senior year, fall term.

A study of the principles and practice of buttermaking, including cream ripening, starters, churning, salting, working, packing, judging, and marketing of butter, also equipment and operation of factories. Two lectures and two practices per week. Text: Principles and Practice of Buttermaking—McKay & Larson; reference: Buttermaking—John Michels. (Professor Potts.)

CHEESE MAKING.—Senior year, fall term.

A study of the care and handling of milk for cheese-making, the action of pepsin, rennet, and heat on milk; the manufacture of cottage, hybrid and cheddar cheeses, with brief description of the making of other kinds, the ripening of cheese, cheese-judging, and

the equipment of cheese factories. Two lectures and two practices per week. Text: Cheesemaking—Decker. (Professor Potts.)

Factory Management.—Senior year, winter term.

This course embraces lectures on the operation of creameries, cheese factories, ice cream and dairy plants. Special reference is made to the arrangement of machinery with a view to economizing time and labor. Various systems of accounting are studied, also of receiving cream and marketing butter both locally and in car lots. Plans for buildings and material for constructing the same receive attention in this course, and thorough training in creamery bookkeeping is given. Two lectures per week. (Professor Potts.)

Special Dairy Products.—Senior year, spring term.

This course, as indicated, embraces study and practice work in the manufacture and sale of special dairy products. These in particular, are the butter substitutes, modified milk, market milk and ice cream. The practicum work supplements the lectures and gives the student a limited amount of experience in the preparation of such of the products as are selected. Two lectures and one practice per week. Extra practicum work may be taken by the students when arranged. (Professor Potts.)

Dairy Engineering.—Senior year, spring term.

This course is intended to familiarize the student with all kinds of dairy machinery, as pasteurizers, churns, boilers, engines, and refrigerating machinery. Their construction and principles of operation are studied in particular. Two lectures per week. (Professor Potts.)

Business of Dairying.—Senior year, spring term.

A study of dairy cow production and how to obtain the maximum on the dairy farm. Factors in the economical production of dairy products and management of dairy farms are given particular attention. Two lectures per week. Text: Business of Dairying—Lane. (Mr. Holmes.)

Dairy Farming.—Regular Course, Senior year, spring term; also in Two-Year Course in Agriculture, First year, fall term.

A course of lectures on operation of a dairy farm, management of a dairy herd, and producing and marketing dairy products. The laboratory work consists of a study and operation of cream separators, Babcock testing of milk and cream; ripening of cream, and making of butter. A very practical elementary course. Three lectures per week. In reference to the subjects of the Special Dairy Course in Buttermaking see page 57, where all the courses of the Agricultural Division are grouped. Text: Dairy Farming—Michels. (Mr. Holmes.)

Department of Animal Husbandry

W. A. LINKLATER, *Professor*
....., *Associate*
W. W. EVANS, *Superintendent of Farm*

The Department of Animal Husbandry gives instruction in those subjects which deal with live-stock production. Lectures are given in the class room in Morrill Hall, and the classes meet for practicum in the live-stock judging room in the farm barn. The instruction work includes the study of the recognized market types and the more popular improved breeds of live stock. A study is made of the feeds available to the Oklahoma stock farmer, and methods of preparing and feeding these feeds to obtain the most economical results. A complete collection of samples of the various feeding stuffs has been procured and arranged for class instruction. The breeding and management of the various kinds of live stock are also made a feature of the course. The following large collection of herd books on file in the department library are available for class use in the tracing of pedigrees and the studying of special breeds, strains and families of live stock: *Beef cattle,* English Shorthorn—Coats; American Shorthorn; American Hereford; American Aberdeen Angus; American Galloway. *Dual purpose cattle,* American Red Poll; American Brown Swiss. *Dairy cattle,* American Jersey; American Guernsey; American Holstein Friesian. *Horses,* American Clydesdale; American Percheron; American Shire; Morgan; American saddle Horse; American Hackney; American Cleveland Bay; American Shetland Pony; American Trotting Register, and American Trotting Year Book. *Swine,* Ohio Standard Poland China; National Duroc Jersey; American Berkshire; Chester White; Ohio Improved Chester White. *Sheep,* American Shropshire; American Hampshire; American Cotswold; American Southdown; National Delaine Merino. Judging live stock by means of the use of the score card, as well as comparative stock judging, is fully emphasized. The live-stock equipment affords an excellent opportunity to study the improved breeds of stock. The pure-bred live stock represented are as follows: *Cattle*—Shorthorns, Herefords, Aberdeen Angus, Red Polls, and Jerseys. *Swine*—Poland Chinas, Berkshires, Duroc Jerseys, and Hampshires. *Sheep*—Shropshires. *Horses*—Percheron. In addition high class work horses and mules are used as work stock on the

farm, and these, together with the animals used in Experiment Station work, are available for instruction in live-stock judging. Practical instruction is given in the care, handling, and feeding of live stock, and the subjects throughout are made as practical as possible.

SUBJECTS

STOCK JUDGING.—Freshman year, fall and winter terms.

A thorough training in score-card work is given. Special study is made of animal form, as an index of excellence in beef, dairy, mutton, wool and pork production, and of efficiency in labor. Careful consideration is given to the standard market classes and grades of live stock. Two practicums per week. Text: Judging Live Stock—Craig. (Prof. Linklater.)

BREEDS OF LIVE STOCK.—Sophomore year, fall and winter terms.

The leading improved breeds of horses, cattle, sheep and swine are studied, as to their origin, development, adaptability and breed characteristics. The practicum work consists of score-card and comparative judging of representatives of the various breeds of stock kept on the farm and those of nearby breeders. Prerequisites: Stock-judging. Two lectures and one practicum per week. Text: Types and Breeds of Farm Animals. (Professor Linklater.)

PRINCIPLES OF BREEDING.—Junior year, winter term.

A study of facts and problems especially important to the plant and animal breeder, including the kinds and causes of variation, the transmission of character, controlling of type, laws of correlation and heredity, and prepotency. Three lectures per week. Text: Parts I, II and III of Principles of Breeding—Davenport. (Professor Craig.)

PRACTICE OF ANIMAL BREEDING.—Junior year, spring term.

The selection of breeding stock, systems of breeding, including grading, cross-breeding, line breeding and in-and-in-breeding, pedigree and herd book study with a view to becoming acquainted with methods of registration, and also with the leading strains and families of the different breeds of live stock, methods of keeping live stock breeding records, identification, etc. Prerequisites: Principles of Breeding. Text: Part IV of Principles of Breeding—Davenport (Professor Craig.)

FEEDS AND FEEDING.—Junior year, spring term.

A study of the elements and compounds, of nutrition, the composition of the animal body, the processes of digestion, assimilation and elimination, and the function of the different nutrients in animal nutrition, together with the composition of feeds, the compounding of rations for different purposes and for different

classes of stock, and the feeding, fattening, and breeding of dairy and work stock. Prerequisites: Organic and Inorganic Chemistry and Advanced Animal Physiology. Four lectures per week. Text: Feeds and Feeding—Henry. (Professor Linklater.)

ADVANCED LIVE-STOCK JUDGING.—Senior year, fall term.

A course for advanced animal husbandry students in comparative judging of the various market types and the improved breeds of live stock. Prerequisites: Stock Judging and Breeds of Live Stock. One lecture and two practicums per week. Text: Judging Live Stock—Craig. (Professors Craig and Linklater.)

STABLES AND EQUIPMENT.—Senior year, winter term.

This course embraces the study of stables and equipment especially suited for the handling of the different classes of live stock, with special reference to convenience, needs of the animals, and sanitation. Two lectures per week. Text: Farm Buildings—Sanders. (Professor Linklater.)

LIVE-STOCK MANAGEMENT.—Senior year, winter term.

A study of the most practical methods of producing, feeding and marketing different classes of farm stock. Prerequisites: Principles of Breeding, Practice of Animal Breeding, and Feeds and Feeding. Texts: The Horse Book—Johnstone; Beef Production—Mumford; The Farm Dairy—Gurley; Sheep Farming in America—Wing. (Professor Linklater.)

BUSINESS OF LIVE-STOCK PRODUCTION.—Senior year, spring term.

A comparison, from the standpoint of revenue, of general stock raising with the production of special classes of stock; pure-bred stock with grade or market stock; and the special business methods applicable to each. Two lectures per week. (Professor Linklater.)

THE FARM DEPARTMENT

The College farm is a part of the regularly organized work of the Animal Husbandry Department.

The tract of land owned by the College embraces about a thousand acres. About eighty acres of this is given over to the college campus and to horticultural grounds, and one hundred and fifty acres are used by the Experiment Station for cultivated plot work, making the college farm proper consist of about eight hundred acres. This acreage embraces a variety of soil, and includes both lowland and upland. The lowlands are adapted to the growing of corn, alfalfa and other crops of a similar nature, while the uplands are suitable for pasturage. Thus the whole makes a very fit equipment for the breeding and feeding of live

stock. As the pasture lands lie mostly along the north side of the farm, the fences are being arranged so as to permit of a division of the cultivated lands from the pasture lands.

The purpose of the farm is to illustrate as far as possible, in the preparation of the land, the growing of crops, and the management thereof, the best agricultural practices as adapted to Oklahoma. It is intended to be helpful to the farmer who inspects it, as well as instructive to the student who may see its daily operations. Special effort is to be made to bring the student in closer touch with the farm work. It has been felt that our agricultural courses should be stronger in this regard, and it is the intention to bring the student in the agricultural division in much closer touch with farm work than it has been possible to do in the past. In other words, it is sought to make the farm as much a department of instruction for the student as any laboratory, or other equipment of the College wholly devoted to that purpose.

Subjects Common to all Departments of the Agricultural Division

Thesis.—Senior year, spring term.

In the regular course each student during the spring term, senior year, is required to prepare a thesis on some subject of research relating to any of the problems of agronomy, animal husbandry, dairying or horticulture. The subjects must have the approval of the head of the department under whom the student is taking the major study.

Rural Economy.—Senior year, fall and winter terms.

This subject embraces a presentation of such topics as the factors of agricultural production, the organization of the farm, the economic processes which determine the size of farms, methods of acquiring land, tenancy and land ownership in the United States, the study of markets and marketing, with all other cooperative work likely to enlist the support of the farm. The matter of farmers' institutes and all other features pertaining to the farmer's duties as a rural citizen are discussed. Two lectures per week. (Professor Craig.)

Agricultural Journalism.—Senior year, winter term

The presentation of this subject will have in view the bringing of the students of the agricultural division into closer relation with the agricultural press. The main effort will be directed towards giving to the students of the various phases of agriculture such instruction as will enable them to prepare acceptable copy on farm topics—such instruction as will afford them an insight into the proper preparation of subjects for the agricultural press. As the College has an up-to-date printing plant, and there is being

constantly prepared for the agricultural periodicals a large number of publications such as regular bulletins and press bulletins, there will be abundant material to familiarize the student with the work involved, and with its publication. Three lectures per week. (Prof. Craig.)

COLLEGE AND EXPERIMENT STATION WORK.—Senior year, winter or spring term.

This is a study of the various methods of conducting the different kinds of experimental work relating to animal husbandry, agronomy, dairying and horticulture. It familiarizes the student with the organization of the experimental work in this country and enables him to become informed in reference to the actual experimental work that has been conducted in these various lines. The College work of instruction will be discussed in such a way as to present the most modern methods of teaching these various departments of agriculture and assist the student to present the topics relating to these in the most effective manner. The students will be brought in closer touch with experimental work which is under way at the Experiment Station and may be called upon to take charge of lower class work. Three lectures and two practicums per week. (Professor Craig.)

ELEMENTARY AGRICULTURE.—Sophomore year, spring term.

This is a required subject for all Normal students; and is intended to qualify them as teachers of the elementary principles of agriculture, horticulture, stock feeding, forestry and road building. Three lectures per week. (Professor Moorhouse.)

Department of Short Courses

H. P. MILLER, *Principal*

The Short Courses offer young men and young women who feel they cannot take the time or afford the expense of taking the regular course a brief training during that part of the year when they can most conveniently leave home in the more immediately practical subjects.

The Short Courses are not considered substitutes for the regular course, but are planned to meet a demand and condition. It is hoped that many will continue their studies in the longer course.

The Short Course will be found very helpful in the every day practices of the farm or home.

For details of the subjects taught see page 56 of this Catalog, and for further information write the principal of the Short Courses.

The Short Course for Farmers.—H. P. Miller.

This course covers one week at some time during the winter and is designed for mature farmers and all residents of Oklahoma interested in rural industries. It consists of a series of lectures on practical subjects by members of the College faculty and experts from other states in the various fields of agricultural investigation.

The Boys and Girls Agricultural Club.

The purpose of this organization is to enlist the interest of the boys and girls of Oklahoma farms in the work of the farm and home by distributing them improved seeds of various kinds and literature upon various phases of work. Also to encourage them in making public exhibits of their products and handiwork.

The Agricultural Experiment Station

The main line of work of the Agricultural Experiment Station is the conducting of experiments to solve the various problems that arise in connection with farming in the State of Oklahoma. The endeavor is to formulate tests and experiments which are of importance to the Oklahoma farmer, and yet such as he cannot spare the time or expense to solve himself. This means extensive experimental work in feeding the various classes of live stock with the several crops peculiar to the state. It also includes extensive investigations to find out what crops may be profitably grown, with also elaborate tests of the different varieties. This feature of the work extends, in addition, to the orchard and a vegetable garden. It is also a very important part of our work to investigate the diseases of animals as well as those observable in the field, garden and orchard. In addition, the Experiment Station is making an earnest effort to assist the dairy industry, employing a fully equipped creamery for conducting such investigations as may seem advisable. To carry on this work the Experiment Station receives two funds from the Federal government which include $15,000, known as the "Hatch fund", and during the present year $13,000 from the "Adams fund". The Station, in a bulletin recently published, indicates something of its activity in the past, so that it only remains to mention some of the work that has been under way during the present year.

1. The Veterinary Department, under Dr. Lewis, has conducted the following lines of outside work:

   (*a*) Prevention of Blackleg. Since July 1, 1908, forty-six Blackleg vaccinating outfits have been sent to stockmen.

(*b*) The department has distributed 768,370 doses of vaccine up to the present time.

(*c*) Since this spring, investigations have been made in successfully preventing hog cholera in two districts of the state.

This department is at the present conducting at the Station the following investigations, and bulletins covering these are ready for the press.

(*a*) Test of bacterial content of butter.
(*b*) Animal breeding—influences on impregnation.
(*c*) Bacterial analyses of water.

2. THE HORTICULTURAL DEPARTMENT, under Professor Morris, is conducting the following lines of outside work this year:

(*a*) The identification of weeds. Since July, 1908, one hundred and twenty weeds have been sent in to be identified, and methods of eradication have been described and sent out to those forwarding the weeds.

The department is at present conducting at the Station the following lines of investigation:

(*a*) Investigations in Forestry. Planting and testing of various trees.
(*b*) Testing varieties of fruit trees.
(*c*) Orchard cultivation and cover crops.
(*d*) Experiments with potatoes, cabbages, and tomatoes.
(*e*) Investigation of cause of tomatoes failing to set fruit.
(*f*) Investigation of bud development of peaches and apples.

3. THE AGRONOMY DEPARTMENT, under Professor Moorhouse, conducts the following lines of outside work:

(*a*) Establishing Bermuda grass pastures. Bermuda grass roots have been sent this spring to sixty-two farmers of the state.

(*b*) Improved seed distribution. Since March, 1908, improved seed has been sent to eighty farmers for trial.

(*c*) Alfalfa seed testing. Within the last three years six hundred samples of alfalfa seed have been tested for farmers.

This department is at present conducting at the Station the following investigations:

(*a*) Continuous culture of grain—wheat—the plot growing wheat continuously has yielded a six-year average of 14 bushels, while the adjoining plot treated with farmyard manure for a similar period has yielded an average of 25 bushels.

(*b*) There are 600 plots on which varieties of grain, grasses, and clovers are being tested.

(*c*) Depth of plowing for wheat.

(*d*) Fertilizer tests with cotton, alfalfa, and Indian corn.

(*e*) Rotation of crops.

(*f*) Plant breeding and selection. Five hundred types of farm plants are under investigation.

4. THE DAIRY DEPARTMENT, under Professor Potts, conducts the following lines of outside work:

(*a*) Cooperative creamery investigations. The creamery of the Agricultural Experiment Station has six hundred patrons who furnish cream for buttermaking.

(*b*) A cow census is under way preliminary to conducting experiments with the herds of these patrons.

This department is at present conducting at the Station the following investigations:

(*a*) Experiments relating to cost of making a pound of butter.

(*b*) Influences that bear on the incorporation of moisture in butter.

5. THE ANIMAL HUSBANDRY DEPARTMENT of the Experiment Station, under Prof. Linklater, is at present conducting the following lines of experiment:

(*a*) Forage crops for hogs. Forty hogs which have been divided into eight lots are being fed different forage crops.

(*b*) Digestion work with sheep, including Bermuda grass, alfalfa, and other common fodders.

(*c*) Assisting in the investigation of feeding cottonseed meal to hogs.

6. THE DEPARTMENT OF ENTOMOLOGY, under Professor Sanborn, conducts the following line of outside work:

(*a*) Nursery inspection. Since July, 1908, ninety-seven nurseries have been inspected.

This department is at present conducting at the Station the following investigations:

(*a*) Studies of the hibernation of the chinch bug.

(*b*) Spraying for the destruction of orchard insects.

(*c*) Diseases of the San Jose Scale.

7. THE CHEMICAL DEPARTMENT made since July, 1908, three hundred and fourteen miscellaneous analyses of feeds, dairy products, etc.

The department is investigating the chemistry of cottonseed meal, and the feeding of it to hogs.

From this summary of the work which is going on this year a true estimate may be made of the various lines of activity that the Experiment Station assumes. The results of these experiments are issued in bulletins, which (regular edition is 25,000) are sent to any farmer in the state requesting them. As the heads of the departments in the experimental work are also the heads of the departments in the College work, the experiments of the Experiment Station afford them abundant material for use in the instruction of classes. As far as the prescribed work of the Experiment Station will permit, cooperative work is undertaken with farmers, and every effort is made through the use of the press of the state, or farmers' institutes and other conventions to bring the results of the experimental work before the farmers of the state. The students of the Agricultural Division are required to follow such experiments more or less closely in their courses. Consequently they have the advantage of learning the latest results bearing on the work undergoing experiment.

THE ENGINEERING DIVISION

R. E. CHANDLER, *Professor*

The Engineering Division embraces the courses in mechanical and electrical engineering, civil engineering, and architectural engineering. The division has also charge of the instruction in physics.

The subjects of the Engineering Division are taught by the following departments:

The Department of Mechanical and Electrical Engineering.
The Department of Civil Engineering.
The Department of Architectural Engineering.
The Department of English. (See page 96.)
The Department of Mathematics and Astronomy. (See page 100.)
The Department of Chemistry, Metallurgy, and Mineralogy. (See page 101.)
The Department of History and Political Economy. (See page 104.)

The engineering courses are intended to prepare young men for positions of usefulness and responsibility in the mechanical, civil, electrical, and architectural engineering professions.

This division now occupies three buildings: the Engineering Building, the Shop Building, and the Civil Engineering Building. In these buildings are large and well lighted class and drafting rooms, a carpenter's shop, a machine shop, a blacksmith shop, and a foundry, all well equipped with tools and machinery. There are also the electrical laboratory, equipped with direct and alternating current machinery and an excellent assortment of instruments, a civil engineering laboratory especially equipped for testing materials of construction, a mechanical engineering laboratory fitted with apparatus for making tests on steam engines, gas engines, and fuels.

The power plant of the College with its steam boilers, steam engines and generators is also used by the division for the purpose of making tests and familiarizing the students with the use of this class of machinery.

Department of Mechanical and Electrical Engineering

A. P. LITTLE, *Associate Professor*
C. E. SCHOENE, *Associate Professor*

A single course is given in mechanical and electrical engineering, as it is felt that every electrical engineer must in the first place be a mechanical engineer, and that to meet modern requirements a mechanical engineer must have a thorough knowledge of electrical engineering. In the spring term of the Senior year an elective is offered.

The early part of the course is devoted to a thorough grounding in English, mathematics and physics—mechanical drawing and shop work also being given. The last two years are devoted to the higher mathematics, and to the more technical engineering studies, including, in mechanical engineering, machine designing, steam machinery, thermodynamics, strength of materials, etc.; and including in electrical engineering, electrical measurements, theory, design and testing of direct and alternating current dynamos and motors, rotary converters and transformers, storage battery, arc and incandescent lamp testing; power plant and substation design; long distance power transmission and systems of power distribution; electric lighting; electric railways; telegraph and telephone engineering, etc.

The facilities for instruction in mechanical engineering consist of a machine shop in which are to be found lathes, shaper, milling machine and planer, a universal grinding machine, a drill press and an extensive assortment of small tools; a wood working shop supplied with a circular saw, a band saw, wood-turning lathes, a pattern-maker's lathe, and work benches with complete sets of carpenters' tools; a blacksmith shop containing 24 downdraft forges and a complete supply of anvils and blacksmith tools; a foundry with an 18-inch cupola, core oven, sand sifter, foundry benches and tools, the blast for the cupola and blacksmith forges being furnished by an electrically driven fan. In the mechanical engineering laboratory there is a 100,000-pound automatic, autographic testing machine, a 10-horse-power Alden dynamometer, a steam engine and a gas engine, steam and coal calorimeters, steam engine indicators, tachometer, and an outfit for making tests on refrigerating plants, including indicators for ammonia compressors and ammonia gauges, etc.

In the electrical engineering laboratory the machinery has been selected and arranged in such a manner as to afford students the greatest facility for acquiring a thorough knowledge of different types of electrical machinery, their management and methods of testing. Especial attention has been devoted to alternating polyphase machinery—justified, it is believed, by the rapid development of this branch of engineering. Power is furnished by a 40-kilowatt and a 30-kilowatt dynamo directly connected to 10x10 automatic engines. The other electrical machines con-

sist of direct current series, shunt and compound dynamos and motors, alternating current transformers, Scott phase changing transformers, two and three-phase rotary converters, all of latest design. A Cooper-Hewitt mercury vapor arc lamp, flaming arc lamp, and magnetic arc lamp have been added recently to the equipment. The laboratory is well supplied with all necessary measuring instruments, including voltmeters, ammeters, and wattmeters of wide range for alternating and direct current, tachometers, etc.; as well as galvanometers and other instruments of great precision.

The central power plant is used in both electrical and mechanical engineering work for tests on engines, boilers, dynamos, etc.

The new power plant will be equipped with an additional 100-kilowatt direct current generator; also a 30-kilowatt synchronous converter for experimental and testing purposes.

SUBJECTS

Freshman Physics.—Spring term.

Elementary course in general physics. Five recitations per week. Text: Gage's Introduction to Physical Science. (Associate Professor Little.)

Mechanics.—Sophomore year, fall term.

Elementary course in mechanics, including statics and kinetics. Three recitations per week. Text: Merrill's Elementary Mechanics. (Professor Chandler.)

Descriptive Geometry.—Sophomore year, winter and spring terms.

Orthographic projection of lines, planes and surfaces; axonometric projections, surfaces of the second order; intersections, shades and shadows, and linear perspective. Four recitations and two drafting-room hours per week, winter term; three recitations and two drafting-room hours per week, spring term. Text: Church's Descriptive Geometry. (Associate Professor Schoene.)

Mechanical Drawing.—Sophomore year, fall, winter and spring terms; afternoon.

Projection on right and oblique planes; intersection of surfaces and solids; machine sketching; making of complete working drawings; tracing and blue-printing. Six drafting-room hours per week, fall and winter terms; four drafting-room hours per week, spring term. (Associate Professor Schoene.)

KINEMATICS.—Junior year, fall term.

Study and design of mechanical movements, including gearing, belting, links, etc. Two recitations per week. Text: Schwamb & Merrill's Elements of Mechanism. (Associate Professor Schoene.)

JUNIOR PHYSICS.—Junior year, fall, winter and spring terms.

Advanced course in mechanics, sound, heat, light, and electricity. Four recitations per week, fall term; three recitations and two laboratory hours per week, winter term; four recitations and four laboratory hours per week, spring term. Text: Millikan & Gale's Physics. (Associate Professor Little.)

APPLIED MECHANICS.—Junior year, fall, winter, and spring terms.

Statics, moment of inertia, hydrostatics, theory of structures, kinetics. Two recitations per week, fall term; five recitations per week, winter term, and four recitations per week, spring term. Text: Hancock's Applied Mechanics for Engineers. (Associate Professor King.)

STEAM ENGINES.—Junior year, fall, winter, and spring terms.

Material of construction, steam boiler design, care and operation of boilers, study of valve gears, use of indicators, elementary theory of heat engines. Three recitations per week throughout the year. Text: Ripper's Steam Engine. (Associate Professor Schoene.)

THERMODYNAMICS.—Senior year, winter term.

Advanced discussion of the theory of heat engines. Four recitations per week. Text: Reeve's Thermodynamics of Heat Engines. (Professor Chandler.)

MACHINE DESIGN.—Senior year, fall, winter and spring terms; with afternoon work in drafting in the fall and winter terms.

Determination of the proper proportion of machine parts, such as screws, bolts, nuts, shafts, and pulleys; also the designing of various parts of the steam engine. Four recitations and four drafting-room hours per week, fall term; three recitations and six drafting-room hours per week, winter term; five recitations per week, spring term. Text: Unwin's Machine Design. (Professor Chandler.)

HEATING AND VENTILATING.—Senior year, spring term.

General principles of heating and ventilation, with a discussion of steam, hot water, and forced blasts systems of heating. Four recitations per week. Text: Carpenter's Heating and Ventilating. (Professor Chandler.)

ELECTRICAL ENGINEERING.—Senior year, fall, winter, and spring terms.

Electromagnetism and magnetic circuit; direct and alternating current dynamos and motors; electric lighting; electric railways;

systems of transmission and distribution. Four recitations and six laboratory hours per week, fall term; four recitations and four laboratory hours per week, winter term; three recitations and two laboratory hours per week, spring term. Texts: Franklin & Esty's Elements of Electrical Engineering, and Sheldon, Mason & Hausman's Alternating Current Machines. (Associate Professor Little.)

Electric Lighting and Power Transmission.—Senior year, winter term.

The design, installation, and operation of electric lighting systems and plants, and discussion of the various systems for electrical transmission and distribution of power. Four recitations per week. (Associate Professor Little.)

Telegraph and Telephone Engineering.—Senior year, spring term.

Principles underlying the action of practical systems, and the engineering features of their construction. Four recitations per week. (Associate Professor Little.)

Electrical Engineering Practicum.—Senior year, fall, winter, and spring terms, afternoons.

Tests of dynamos, motors, and transformers; direct current, and one, two and three-phase systems; study of arc and incandescent lamps; measurement of power and efficiency. Text: Sever & Townsend's Laboratory and Factory Tests in Electrical Engineering. (Associate Professor Little.)

Wood Working.—Freshman year, fall and winter terms.

Bench work in wood; sawing, planing and joining; center and chuckturning in wood; instruction in care and use of tools. Four hours per week. (Mr. Skinner.)

Pattern-Making and Foundry.—Freshman year, spring term.

Construction of patterns; moulding in sand; core making; melting iron and pouring castings. Ten hours per week. (Mr. Brewer and Mr. Skinner.)

Blacksmithing.—Junior year, fall term.

Iron and steel forging; drawing; upsetting; welding and tempering. Six hours per week. (Mr. Brewer.)

Machine Shop.—Junior year, winter and spring terms.

Filing and chipping; metal work on lathes, planer, shaper, and milling machine. Eight hours per week, winter term, and six hours per week, spring term.

Department of Civil Engineering

E. E. KING, *Associate Professor*

The work in this department is designed to furnish a thorough course of theoretical instruction, accompanied by practice in the various lines of civil engineering. The work as outlined is identical with that of the mechanical and electrical engineering courses during the first two years of the course.

The department possesses ample facilities for ordinary, topographic, and railroad surveying. The equipment consists of various standard makes of engineers' transits, solar attachments, mining transits, a railroad compass, plane table, engineers' and dumpy levels, barometer, hand levels, clinometer, chains, tapes and rods.

The cement and masonry laboratory is located in the Civil Engineering Building, and is well equipped for giving instruction in all lines of cement testing, supplementary to the class room work in masonry construction. It is furnished with a Fairbanks 1,000-pound briquette testing machine, an Olsen 1,000-pound briquette testing machine, moulds for making briquettes, sieves for testing cement and sand, moist closets, Vicat needle, tanks, Gillmore needles, specific gravity and boiling apparatus. In connection with theoretical work in strength of materials, considerable time is spent in the laboratory making tests of concrete beams and arches—plain and reinforced, brick, timber and stone—with the 100,000-pound Riehle testing machine.

The department also possesses a large collection of blue prints and photographs for reference work in designing. Among these are railroad maps, profiles, detail plans of roofs, steel and concrete bridges.

The instruction in the hydraulic laboratory consists of measurements of flow of water through orifices and pipes and over weirs.

SUBJECTS

SURVEYING.—Sophomore year, spring term.

Theory, use, and adjustment of instruments; field work, computations and reports, maps and profiles, U. S. land surveying, court decisions, and deeds. Four field hours per week. Text: Pence & Ketchum's Surveying Manual. (Associate Professor King.)

Hydraulics.—Senior year, fall term.

Pressure and motion of water; laws of flow over weirs, through orifices, tubes, nozzles, pipes, conduits, canals and rivers; meters and measurements of discharge; motors, turbines and water wheels. Three recitations per week. Text: Merriman's Hydraulics. (Associate Professor King.)

Irrigation Engineering.—Junior year, spring term.

Grades, cross-sections, and capacity of canals; surveys and designs of structures; sources of water supply; analysis of hydrographic data; Oklahoma streams; return and seepage water; application to crops; irrigation by pumping; irrigation law. Three recitations per week. Text: Wilson's Irrigation Engineering. (Associate Professor King.)

Roads and Pavements.—Junior year, winter term.

A study of best methods of construction and maintenance of different types of country roads and city pavements, including allowable grades, drainage and methods of assessment; "Good Roads" Movement. Three recitations per week. Text: Baker's Roads and Pavements. (Associate Professor King.)

Retaining Walls and Dams.—Junior year, winter term.

Earth and water pressure; stability of walls and dams; designs of gravity and reinforced concrete walls; foundations. Two drafting-room hours per week. Text: Howe's Retaining Walls for Earth. (Associate Professor King.)

Graphics.—Junior year, winter term.

Elements of statics by graphical methods. Stresses in roof trusses due to dead and wind loads. One recitation and four drafting-room hours per week. Text: Ketchum's Steel Mill Buildings. (Associate Professor King.)

Graphics, Roof Trusses.—Junior year, spring term.

Stresses by algebraic methods. A complete design is made of a wooden and steel roof truss. Six drafting-room hours per week. Text: Howe's Design of Simple Roof Trusses in Wood and Steel. (Associate Professor King.)

Railroad Curves.—Junior year, fall term.

The geometry of the simple, compound, reverse, and transition curve is considered; turnouts; computation of earthwork; field practice in laying out curves. A complete survey is made of a short line of railroad; maps and profiles are made in the office, and cost computed. Two recitations and four field hours per week. Text: Allens Railroad Curves and Earthwork. (Associate Professor King.)

Railroad Engineering.—Senior year, winter and spring terms.

Methods of construction and maintenance of roadbed and struc-

tures; surveys and estimates; organization; signalling; economic theory as applied to location and operation. Two recitations per week. Text: Raymond's Elements of Railroad Engineering. (Associate Professor King.)

MASONRY.—Senior year, winter term.

Materials of construction, piers, abutments, small arches and culverts. Ordinary and deep foundations. Four recitations per week. Text: Baker's Masonry. (Associate Professor King.)

REINFORCED CONCRETE.—Senior year, spring term.

Theory and method of design of floors, beams and columns of reinforced concrete. Elastic theory of the concrete arch. Three recitations per week. Texts: Ketchum's Design of Highway Bridges, and Cain's Steel Concrete Arches. (Associate Professor King.)

BRIDGES.—Senior year, fall term.

Stresses analytically an graphically of different types of bridges. Uniform and wheel loads. One recitation and four drafting-room hours per week. Text: Ketchum's Design of Highway Bridges. (Associate Professor King.)

BRIDGE DESIGN.—Senior year, winter and spring terms.

A complete design, with detailed drawings, is made of a plate girder bridge, a railroad bridge, and a short span reinforced concrete arch. Eight drafting-room hours per week. Texts: Cain's Concrete Arches, and Thompson's Typical Steel Railway Bridges. (Associate Professor King.)

SANITARY ENGINEERING.—Senior year, winter term.

The design and construction of sewerage systems; separate and combined systems; size of sewers; plans and estimates of cost; construction; modern methods of sewage disposal. Four recitations per week. Text: Folwells Sewerage. (Associate Professor King.)

WATER SUPPLY.—Senior year, spring term.

Sources of supply; methods of furnishing, purifying and distributing; design of reservoirs, tanks and standpipes. Four recitations per week. Text: Turneaure & Russell's Public Water-Supplies. (Associate Professor King.)

TOPOGRAPHIC SURVEYING.—Junior year, fall term.

Theory of plane table and stadia; different methods of making topographic surveys; use of the barometer and base line apparatus; a complete survey and topographic map, based on a system of triangulation, is made by plane table and stadia methods. Topographic signs. Two recitations and four field hours per week. Text: Breed & Hosmer's The Principles and Practice of Surveying, Vol. I and II. (Associate Professor King.)

CONTRACTS AND SPECIFICATIONS.—Senior year, spring term.

The law of contracts as applied to engineering practice; the technical features of specifications; relation of engineer and contractor. Three recitations per week. Text: Johnson's Contracts and Specifications. (Associate Professor King.)

Department of Architectural Engineering.

W. A. ETHERTON, *Professor*

On account of the demand for instruction in architecture this department has been established.

A large part of the work given in the other engineering courses applies directly to architectural engineering; this is especially true of the work in the civil engineering course.

All the equipment of the other engineering departments can be used for instruction in architectural engineering. In the woodshop, students in this department will learn the principles of carpentry. The electrical engineering laboratory will afford practical instruction in the electrical wiring and lighting of buildings. In the mechanical engineering laboratory investigations on the heating and ventilating of buildings will be made. The testing laboratory will be used to give instruction in the methods of testing and determining the strength of cements, mortars, brick, stone and other building materials.

During the Freshman and Sophomore year the course is identical with the other engineering courses. Students in architectural engineering will take up the special work pertaining to architecture during the Junior and Senior year.

SUBJECTS

WOOD CONSTRUCTION.—Junior year, fall term.

Attention is given to the properties and adaptabilities of the various woods used in building construction; to computing dimensions and strength of beams, girders, columns, etc.; to methods of framing and joinery, etc. Five recitations per week. Text: Kidder's Building Construction and Superintendence, Part II. (Professor Etherton.)

REQUIREMENTS AND PLANNING OF BUILDINGS.—Junior year, fall term.

A study of the general requirements necessary to the successful planning of the usual type of buildings. Numerous problems in planning will be given. Five recitations per week. (Professor Etherton.)

HISTORY OF ARCHITECTURE.—Junior year, winter term.

A study of the important historical styles of architecture, the elementary forms of design and systems of construction. Typical examples of each style will be studied in detail. Three recitations per week. Text: Hamlin's History of Architecture. (Professor Etherton.)

PLUMBING.—Senior year, fall term.

A study of water supply to buildings and the removal of soil and waste; pipe construction; traps; plumbing fixtures; ventilation; etc. Two recitations per week. Text: Cosgrove's Principles and Practice of Plumbing. (Professor Etherton.)

BUILDING MATERIALS.—Senior year, fall term.

A detailed study of all building materials not included in masonry and wood construction. Ornamental iron and sheet metal work; plastering; metal lath and corner beads; tiling and mosaic; composition flooring; glass and glazing; roofing; insulating and sound-deadening materials; paints; building hardware; elevators, etc. Two recitations per week. (Professor Etherton.)

ARCHITECTURAL ENGINEERING PROBLEMS.—Senior year, winter term.

Advanced graphics and roofs and special problems in wood, steel and cast iron framing and in foundations. Five recitations per week. Text: Tucker's Steel Construction. (Professor Etherton.)

ARCHITECTURAL ENGINEERING SEMINARY.—Senior year, spring term.

Original investigations of assigned topics in the various subjects of the course; reviews of books; abstracts from current technical journals and other publications. Three recitations per week. (Professor Etherton.)

OFFICE BUILDING CONSTRUCTION.—Senior year, spring term.

Detailed study of the framing-plans of existing office buildings and the solution of a problem in office building construction. Four recitations per week. Text: Freitag's Architectural Engineering. (Associate Professor King.)

DOMESTIC SCIENCE AND ARTS DIVISION

SARAH WINDLE LANDES, *Professor*
REBECCA ACHESON, *Professor*
HARRIETT W. DAY, *Assistant Professor*
PEARL WIAR, *Assistant*
ORPHA CATON, *Assistant*

The course in Domestic Science and Arts for 1909-10 is much more comprehensive than heretofore.

An entire floor of the new Women's Building will be set aside for the work in domestic science and arts. The space at command

comprises two large sewing rooms, a cutting and fitting room, a kitchen laboratory, practice dining room, demonstration lecture and recitation room, and a studio, besides offices, lockers, etc.

In addition to the regular work in domestic science and arts, there is to be introduced a fine arts section, which gives training in the designing and making of useful and ornamental articles for the home, such as table covers, cushions, towels, trays, lampshades, etc. In the dressmaking classes, the students will study the selection of suitable colors and designs for clothing. In advanced classes, students have the opportunity of using the mediums, water colors, oil and pastel in doing original work from nature—flowers, landscape or figure.

The courses offered in domestic science and arts are as follows:

1. The regular four years' course, leading to the degree of Bachelor of Science.

2. A course in connection with the Teachers' Normal Division. It is intended chiefly for those needing a general elementary knowledge of domestic science and arts for use in connection with the teaching of the common school branches. This occupies four hours weekly during two terms of the Sophomore year.

3. A course in domestic science alone. It is given for four hours each week during the fall and winter terms in the Sophomore year of the Electrical Engineering course, and is intended for men who may need a practical knowledge of cooking when camping or on surveying trips.

4. A two years' course in connection with the Short Course in Agriculture. Simple work is given in sewing, cooking, hygiene, sanitation, house-furnishing, etc. This course is adapted to the needs of those who wish to apply the knowledge gained to the solving of problems met in their own housekeeping.

5. Special courses in domestic science or in domestic arts, or in the fine arts, are arranged, by permission of the president, for students of mature years who carry sufficient work to denote earnestness of purpose.

The subjects of the Domestic Science and Arts Division are taught by the following departments:

The Department of Domestic Science.

The Department of Domestic Arts.

The Department of Zoology and Veterinary Science. (See page 93.)
The Department of Mechanical and Electrical Engineering. (See page 77.)
The Department of Horticulture and Botany. (See page 58.)
The Department of English. (See page 96.)
The Department of German and Latin. (See page 98.)
The Department of Mathematics and Astronomy. (See page 100.)
The Department of Chemistry, Metallurgy, and Mineralogy. (See page 101.)
The Department of Entomology. (See page 106.)
The Department of History and Political Economy. (See page 104.)
The Department of Normal Training. (See page 109.)

EQUIPMENT.

For conducting the work as outlined above, the department has an extensive and up-to-date equipment.

The sewing rooms each have seating capacity for thirty students. There are working tables, sewing machines of four different types, three sets of drafting charts, pier glasses, illustrative material showing methods of manufacturing needles, pins, scissors, etc., and museums containing samples of raw material and manufactured products in cotton, wool, silk, etc.

The kitchen laboratory has a large steel range, for burning either wood or coal; also, a gas range, and individual gas burners. There is an abundant supply of cooking utensils, of the latest and most approved models, comprising many labor-saving devices. In several museum cases are shown methods used in the manufacture of flour, breakfast foods, cocoa, and other food products. The equipment holds also a valuable set of four meat-cutting charts, which designate the location of the bones, and the usual methods of cutting meats in the markets.

The dining room has, besides a commodious dining table and chairs, a well-furnished sideboard and two china closets stocked with an entire dinner and tea set. There are, besides, knives, forks, and other table implements in silver, as well as fancy pieces in silver, china and crystal.

Both the domestic science and the domestic arts section own many valuable books of reference; and about a dozen of the best household magazines are received regularly.

The fine arts studio is well fitted with desks, drawing boards, easels, copies in the flat, and plaster casts of noted sculpture; also, prints in black and white, and in color of celebrated paintings.

SUBJECTS

SEWING.—Freshman year, fall, winter, and spring terms.

The instruction this year comprises the various stitches used in hand sewing, including the different seams, hems, patching, darning, etc. Later, the use, care, and management of sewing machines are taught. The drafting, cutting, and making of simple underwear completes the practical work of the year.

MILLINERY.—Freshman year, fall and winter terms.

The course in millinery deals with the application of line, form, color, and texture in the making and trimming of hats from buckram, straw, felt, velvet, and tulle. Economy and care of materials are taught in the renovating of silk, satin, velvet, feathers, etc.

BASKETRY.—Sophomore year, fall and winter terms.

In this subject students are expected to apply their knowledge of drawing in making their own designs. The work is given for the sake of developing carefulness and nicety of touch; and to lead to an appreciation of the practical and artistic value of simple materials and designs.

TEXTILES.—Sophomore year, winter term.

Under this topic the discussions deal with the development of primitive industries; the growth of fibers, and their properties, manufacture, adulteration, and comparative economic value.

HYGIENE.—Sophomore year, winter term.

In this course it is the purpose to give a practical knowledge of the functions of the human body, and to show the need of personal responsibility in the care and improvement of health. Texts: Personal Hygiene—Pyle; Practical Hygiene—Currier.

COOKING.—Sophomore year, winter and spring terms.

During this year the study of food materials as regards chemical composition, nutritive value, suitable combinations, and digestibility receives particular attention. The fuels in common use and the construction and management of various kinds of stoves

are considered. Practical work consists of the preparation of simple dishes from ordinary materials. Care is taken that the student learns to reason from cause to effect and vice versa.

SANITATION.—Sophomore year, spring term.

Attention is given to the sanitation and surroundings of the house; also to water supply, drainage, ventilation, heating, lighting, furnishing, and cleaning. Text: Handbook of Hygiene and Sanitary Science—Wilson.

HISTORY OF COSTUME.—Sophomore year, spring term.

Articles of ordinary apparel are traced through various stages of evolution. Texts: Manners and Customs in the Middle Ages—Lacroix; Costume in England—Fairholt; Gallus—Becker; Charicles—Becker.

COOKING.—Junior year, fall, winter, and spring terms.

This work is along practical lines and is a continuation of that done in the Sophomore year, but advanced in character. Entire meals of a simple nature are prepared and served.

MARKETING.—Junior year, winter term.

The selection of meats is taught from meat charts, and by visits to meat markets. The selection, cost, and care of other food materials are considered; also food production and manufacture. Text: United States Government Bulletins.

TABLE SERVICE.—Junior year, spring term.

Besides the actual serving of ordinary meals, lectures are given regarding the service required for ceremonious occasions. Attention is paid to the laundering of table linen; care of silver, glass, and china; also the general care of the dining room.

SEWING.—Junior year, fall, winter, and spring terms.

Drafting from exact measurements, cutting and fitting are taken up, each student making at least one entire suit.

HOME NURSING.—Senior year, fall term.

This is designed to enable women to care intelligently for cases of sudden illness or accident, and to perform the duties of a nurse when trained service is not employed. The use of disinfectants, quarantine regulations, and precautions against the spread of disease are considered. Practical work is given in the preparation of food for invalids. Texts: Food and Dietetics—Hutchinson; Practical Dietetics—Thompson; Food in Health and Disease—Yoe; A Textbook on Nursing—Weeks.

HOME ECONOMICS.—Senior year, fall and winter terms.

This includes discussions regarding the evolution of the house; homes of various peoples as affected by climate, industrial and social conditions; cost of living; divisions of income; household

accounts; cash and credit systems; savings and investments; domestic service. Texts: Elementary Principles of Economics—Ely and Wicker; Woman's Share in Primitive Culture—Mason; Women Wage Earners—Campbell; The Cost of Living—Richards; Domestic Service—Salmon.

Chemistry of Foods.—Senior year, spring term.

By laboratory methods the constituents of food are determined; also the effect of heat upon them; and, approximately, the action upon foods of the digestive juices.

For those specializing in domestic economy, additional subjects required are art needle work, evolution of recipes and proportions, methods in teaching domestic economy, and comparative study of American and foreign cookery.

THE SCIENCE AND LITERATURE DIVISION

The College has for some time maintained a "General Science" and a "Science and Literature" Course. Within the last year the various courses of study comprehended under these two titles have been thoroughly revised, considerably augmented, and recombined as the *Science and Literature Division.*

The subjects of the Science and Literature Division are taught by the following departments:

The Department of Zoology and Veterinary Science.
The Department of English.
The Department of German and Latin.
The Department of Mathematics and Astronomy.
The Department of Chemistry, Metallugry, and Mineralogy.
The Department of History and Political Economy.
The Department of Public Speaking.
The Department of Mechanical and Electrical Engineering. (See page 77.)
The Department of Civil Engineering. (See page 82.)
The Department of Horticulture and Botany. (See page 58.)
The Department of Domestic Science. (See page 86.)
The Department of Domestic Arts. (See page 86.)
The Department of Agronomy. (See page 61.)
The Department of Animal Husbandry. (See page 68.)
The Department of Architectural Engineering. (See page 85.)

The Music Department. (See page 116.)
The Department of Entomology. (See page 106.)
The Normal Department. (See page 109.)

For a tabulated statement of the work offered in this division, see the first part of this catalog. For a description of the various courses see departmental announcements below.

THE ELECTIVE SYSTEM.

From the tabulated statement in the front of the catalog, it will be noted that after the Sophomore year much freedom of election is offered. By a wise exercise of this freedom a student can obtain not only a broad general education, but also a large degree of specialization in any of the departments included.

RELATION TO OTHER DIVISIONS.

Besides the instruction given to students taking the Science and Literature Course, the instructional force of this division gives much of the collateral work taken by students in the other divisions. Conversely, among the courses offered to students of this division are many from the various departments of the other divisions. For example, a student who wishes to specialize in one of the departments of the Science and Literature Division may elect a considerable amount of work in agriculture, in pedagogy, or in domestic science and art. This feature of the work is in accord with recent educational development, and enables the earnest student to prepare himself or herself for the specific work to which opportunity and inclination call.

REQUIREMENTS FOR ADMISSION.

For admission to the Freshman Year of this division, students must have completed satisfactorily the tenth grade of an accredited high school, or equivalent work elsewhere, or must pass a satisfactory entrance examination, on the work for which they have not credits. For admission to the Sophomore Year applicants must have completed the twelfth grade of an accredited high school, or equivalent work elsewhere, or must pass a satisfactory entrance examination. Students applying for special

work are admitted only in special conditions. See requirements for admission in the first part of this catalog.

EQUIPMENT.

The Science and Literature Division is well equipped for its work. Besides, its large teaching force, it has the books, maps, instruments, apparatus, specimens, charts and materials needed by its several departments. For further information concerning the equipment and the work offered see the announcements of the various departments, immediately following:

Department of Zoology and Veterinary Science

L. L. LEWIS, *Professor*
W. R. WRIGHT, *Assistant*

This department occupies quarters in Library Hall. The laboratories and lecture rooms are well equipped with the necessary apparatus for giving instruction in the various subjects taught in the department. The apparatus for microscopic work consists of twenty-six compound microscopes with complete sets of eye-pieces and objectives, three microtomes, dissecting instruments and photomicrographic apparatus. Wall charts and dissectable models of the various types of animals, skeletons, articulated and disarticulated, are at hand to illustrate the work in zoology and veterinary medicine. Special apparatus is provided for advanced work in physiology.

The equipment in the bacteriology laboratory is adequate for all of the work offered. The necessary microscopes, sterilizers, incubators, and glassware are available for those taking either the elementary or advanced work in the subject. There is also a large collection of slides for reference work along the lines of zoology and veterinary medicine.

SUBJECTS

VETERINARY MEDICINE.

This work is of an elementary but practical character and is given to students in the Short Course in Agriculture and Domestic Economy. The work is given largely by lectures, although considerable reading is required of the students. The value of proper feeding, care and general treatment of stock is especially emphasized in this work. Text: The Diseases of Animals—Mayo. (Dr. Lewis.)

ANATOMY.—Junior year, winter term.

The work consists of two lectures and two practicum periods per week. This course will be given to students taking the animal husbandry course. The work will include a study of the anatomy of the horse, and one or more dissections will be made during the term. Text: Comparative Anatomy of Domestic Animals—Cheveau. (Dr. Lewis.)

MATERIA MEDICA.—Senior year, winter term.

This subject is given three hours per week and is required of animal husbandry students. Text: Materia Medica and Therapeutics—Winslow. (Dr. Lewis.)

VETERINARY MEDICINE.—Senior year, spring term.

This work is given three hours per week to students in the course in animal husbandry. Since this course follows the work in bacteriology, the diseases will be discussed from the standpoint of infection and contagion, treatment, and sanitary regulations necessary to control or eradicate disease. Text: Veterinary Medicine—Law. (Dr. Lewis.)

ZOOLOGY.—Sophomore year, fall term.

This subject is required of science and literature and domestic science and arts students. The course consists of three lectures and recitations per week and two laboratory practicum periods. The instruction given covers the general principles of the science and serves as an introduction to more advanced work in biology. The department is supplied with a good working collection of material for illustrative and reference work. Text: General Zoology—Linville and Kelly. (Dr. Lewis and Mr. Wright.)

ZOOLOGY.—Junior year, winter term.

This course is required of the students in the Agricultural Division and requires three recitations and two practicum periods per week. The plan of this course is more along economic lines and will be as far as possible adapted to the general course of instruction pursued by the agricultural students. Text: Economic Zoology—Osborne. (Dr. Lewis and Mr. Wright.)

ANIMAL PARASITES.—Junior year, spring term.

This course will be a continuation of the above course in zoology and will require three hours per week. The work is designed for students in the animal husbandry course. Text: Animal Parasites and Parasitic Diseases—Kaupp. (Dr. Lewis.)

HISTOLOGY.—Junior year, spring term.

This course will require three recitations and two laboratory periods per week, and is elective for students in the Science and Literature and Normal Divisions. Text: Principles of Animal Histology—Dahlgren & Kepner. (Dr. Lewis.)

Biology.—Junior year, spring term.

Three recitations and two laboratory periods per week. This course is required of science and literature students and may be elected by Normal Division students. This course will include a general study of the problems and factors of organic evolution, heredity, variation, etc. A brief review will be made of the work of the men who have been most prominent in connection with the development of the biological sciences. Text to be selected. (Dr. Lewis.)

Embryology.—Senior year, winter term.

This course is required in the Science and Arts Division and may be elected in the Science and Literature and Normal Divisions. A study of the development of the vertebrates will be made, using the chick as the laboratory material for illustrating the work. The best laboratory technique will be followed in the serial sectioning and reconstruction work. Text: Embryology of the Chick—Foster & Balfour. (Dr. Lewis.)

Advanced Physiology.—Junior year, fall term.

Recitations three hours per week, laboratory four hours per week. This course is required of students in the Agricultural and Domestic Science and Arts Divisions and is elective in the Science and Literature and Normal Divisions Particular attention will be given to the physiology of nutrition. Laboratory work will include the microscopic examination of body fluids, a study of digestive action of the enzymes, and chemical tests for the various products of digestion, secretion and excretion. Text: Textbook of Physiology—Brubaker. (Dr. Lewis.)

Physiology.—Winter term, first year in the Short Courses in Agriculture and Domestic Science.

Four recitations per week. An elementary course in physiology and hygiene which is intended to familiarize the student with the general functions, structure and care of the body. Text: Physiology and Anatomy—Peabody. (Mr. Wright.)

General Bacteriology.—Senior year, fall term.

This course is required of all students in the Agricultural and Domestic Science Divisions and may be elected in the Normal and in the Science and Literature Divisions. Time required is two recitations and two laboratory periods per week. The course will include such general principles of the science as will enable the student to comprehend the importance of bacteria in connection with many of the important changes in foods, relation to disease, to various industries, etc. This work is a prerequisite to any work in bacteriology during the winter and spring terms. Text: Pathogenic Bacteria and Protozoa by Park. (Dr. Lewis and Mr. Wright.)

Bacteriology.—A study of fermentations. Senior year, winter term.

This work will require two recitations per week and two laboratory periods. This subject is elective for Science and Literature

students, Normal students and for all students in the Agricultural Division. The work will include a study of the bacterial decomposition of foods, causes and methods of preventing fermentations, the relation of molds, yeasts and bacteria to industrial processes, and a brief study of the principal enzymes. Text to be selected. (Dr. Lewis and Mr. Wright.)

BACTERIOLOGY.—AGRICULTURAL AND TECHNICAL BACTERIOLOGY. Senior year, spring term.

Two recitations and two laboratory periods per week. This course will be given to those students desiring to familiarize themselves with advanced work along some particular line. The individual preference of the student will be given consideration in assigning the course. Studies in dairy and soil bacteriology and advanced work with pathogenic bacteria will be given preference. Texts, to be selected. (Dr. Lewis and Mr. Wright.)

The Department of English Language and Literature

W. W. JOHNSTON, *Professor*
H. G. SELDOMRIDGE, *Assistant*
....., *Assistant*

In the last few years there has been throughout the United States a great awakening to the importance of the study of the mother tongue. In colleges, in high schools, and even in the "grades" there is a great growth of interest in the English language, the English literature, and the means of attaining to force and fluency in English composition.

In accordance with this widespread advance in English studies, the English courses in the Agricultural and Mechanical College have within the last year been considerably augmented. The work required of Freshmen has been increased from three hours to four hours throughout the year, the required Sophomore work from two hours to four hours throughout the year, while the elective work in the Junior year has been raised from two to five hours, and that in the Senior year from four to five hours.

SUBJECTS

ENGLISH I.—Freshman year, fall, winter, and spring terms; four hours.

This course comprises (1) a study of the elementary principles of composition, (2) practice in composition, and (3) an introduction to literature. The work in each of the three subdivisions of English I will continue throughout the year. Though a text-book will

be used, much of the instruction in composition will be based upon numerous short themes written by the members of the class. Text: Pearson's Principles of Composition. In literature, the following will be carefully studied: Poe's tales and poems, Riverside Literature Series, (Houghton, Mifflin & Co., Boston) No. 119; Byron's Prisoner of Chillon and other poems, same as No. 128; Arnold's Sohrab and Rustum, same, No. 132; Scott's Quentin Durward, same, No. 165; Shakespeare's Macbeth or Merchant of Venice, Arden edition (D. C. Heath & Co., Boston). Other literature will be read under the supervision of the instructor. Throughout the year students must have access to an unabridged dictionary; they are urged to buy either Webster's International or the Standard.

English II.—Sophomore year, fall, winter, and spring terms; four hours.

The work of the Sophomore year will comprise (1) a brief review of English grammar, (2) the systematic study and practice of the forms of discourse, and (3) a study of some of the best English and American literature, both prose and poetry. The review of grammar will extend over the first four or five weeks of the fall term, closing with a final examination, upon which students must make a grade of not less than C. The remainder of the year will be devoted to the forms of discourse and a study of literature. Text: Nutter Hersey and Greenough's Specimens of Prose Composition. (Ginn & Co., Chicago.) For the work in literature the books in the College library will be available. Every student is urged to have in his own room an unabridged dictionary.

English III.—Junior year, fall term; five hours. *Shakespeare.*

Each year two plays will be studied carefully and several others will be read. In the fall of 1909 the plays for careful study will be Twelfth Night and King Lear; in the fall of 1910, Much Ado About Nothing and Hamlet. The Rolfe edition will be used (American Book Co., New York). Students will not be required to buy other than the two plays assigned for careful study. The other plays and abundant critical matter upon Shaakespeare will be reserved in the College library for the use of this class.

English IV.—Junior year, winter and spring terms. *Masterpieces of Eighteenth Century Literature.*

The authors included will be: Swift, Pope, Defoe, Richardson, Fielding, Smollett, Sterne, Johnson, Goldsmith, Sheridan, Gray and Burns. These writers will be studied not only as authors, but as representatives of various aspects of the life and thought of the century in which they lived. The material for this course will be supplied by the College library.

English V.—Senior year, fall term; five hours. *The Poetry of Tennyson.*

This course is designed to give students a comparatively thorough knowledge of the work of one of the master poets of the Nineteenth Century, because it is believed that for many persons Ten-

nyson will prove the gateway to a lifelong love of great poetry. It is for this reason that the work in Tennyson is made to precede English 6. Text: The Globe edition of Tennyson's complete poems (The MacMillan Co., New York). The College library has recently been supplied with a considerable number of critical works purchased for the use of the students in this course.

ENGLISH VI.—Senior year, winter term; five hours. *The Romantic Movement in English Poetry.*

About half of the term will be devoted to Wordsworth, the remainder to Coleridge, Byron, Shelley and Keats. The course will be supplemented by lectures and collateral readings tracing the rise and development of the romantic movement. Text: Curtis Hidden Page's British Poets of the Nineteenth Century. (Benj. H. Sanborn & Co., Chicago.) If the student prefers, he may buy any edition of the complete poetical works of each of the five poets.

ENGLISH VII.—Senior year, spring term; five hours. *Ruskin and Carlyle.*

The assignment of work in this course will vary from year to year. In the spring of 1910 the following will be carefully studied: Ruskin's Sesame and Lilies. Text: Handy Pocket Classic series (The Macmillan Co., New York) Carlyle's Sartor Resartus. Text: The Atheneum Press series (Ginn & Co., Chicago). Other selections will be read under the supervision of the instructor.

Department of German and Latin.

BOYD A. WISE, *Professor*

A three years' course is offered in both German and Latin. No previous knowledge of German is required, but students wishing to enter College Latin must have had the equivalent of the Sub-Freshman Latin.

SUBJECTS

GERMAN

1. BEGINNERS' COURSE.—Sophomore year, fall, winter, and spring terms; four hours.

Mastery of inflections and of the elements of syntax. Reading of easy narrative prose. Written and oral translation from English to German. Conversation. Special attention is given to acquiring a correct pronunciation. Daily practice throughout the year results, with the majority of students, in an accurate and facile pronunciation. Texts: Vos, Essentials of German; Heyse L'Arrabiata; Huss, German Reader; von Hillern, Hoher als die Kirche.

NOTE.—This course is elective for Juniors of the Agricultural Division.

2. ADVANCED READING COURSE.—Junior year, fall, winter, and spring terms; five hours.

The reading of prose is continued during the fall term. Syntax is reviewed, studied more intensively, and verified by constant reference to the grammar in explanation of the text read. One hour a week will be given to conversational German based on sight reading or centered upon a selected topic for which the vocabulary has been memorized. The spring term is devoted to reading scientific German. Weekly compositions. Texts: Mosher, Willkommen in Deutschland; Schiller Wilhelm Tell, Scheffel, Der Trompeter von Sahkingen; Dippold, Scientific German Reader; Harris, German Composition; Thomas, German Grammar; Vos, Materials for German Conversation.

NOTE.—This is the course referred to as elective for Seniors of the Agricultural Division.

3. MASTERPIECES, GERMAN LITERATURE.—Senior year, fall, winter, and spring terms; four hours.

Classics and modern literary German occupies most of the time, but sufficient German of difficult character is read in the spring term, and written translations from current scientific magazines are required from time to time. Texts: Goethe, Hermann and Dorothea; Lessing, Minna von Barnhelm; Schiller, Wallenstein; Heine, Die Harzreise; Sudermann, Frau Sorge; Kayser, Die Electroentheorie; Lassar-Cohn, Die Chemie in taglichen Leben; Kron, German Daily Life.

LATIN

1. CAESAR.—Sophomore year, fall, winter, and spring terms; four hours.

Five books of the Gallic War are read. Methods of translation are carefully taught until the student reaches the point where diligence alone will give mastery. Constant drill in forms, syntax and pronunciation. Weekly composition. Texts: Kelsey's Caesar; Bennett's Latin Grammar; Bennett's Preparatory Latin Writer.

2. CICERO, OVID, VIRGIL.—Junior year, fall, winter, and spring terms; four hours.

Six books of Cicero's orations, including the four against Catiline. Selections from Ovid's Metamorphoses. Six books of Vergil's Aeneid. Study of the hexameter. Weekly composition. Texts: Kelsey's Cicero; Gleason's A Term of Ovid; Allen and Greenough's Vergil; Bennett's Latin Grammar; Daniell's New Latin Composition.

3. LIVY, HORACE AND CATULLUS.—Senior year, fall, winter, and spring terms; five hours.

This course must be preceded by courses 1 and 2. Texts: Burton's Selections from Livy; Shorey and Kirkland's Horace; Merrill's Catullus.

Department of Mathematics and Astronomy

CARL GUNDERSON, *Professor*
W. P. WEBBER, *Assistant*
....., *Assistant*

All students in the regular courses are required to take mathematics through the Sub-Freshman and Freshman years. Engineering students continue the work through the Sophomore and Junior years. Students in the Science and Literature and Normal Divisions may take the mathematics of the Sophomore and Junior years as elective work. Students in these courses may, also, elect astronomy in the spring term of the Sophomore year.

SUBJECTS

ALGEBRA.—Sub-Freshman year, fall, winter, and spring terms, and Freshman year, fall and winter terms.

A thorough drill in the elements of algebra involving factoring, fractions, simple, simultaneous, quadratic and indeterminate equations, inequalities, theory of exponents, logarithms, ratio, proportion and variation; the binomial theorem, choice, limits, series, etc.

GEOMETRY.—Freshman year, fall, winter, and spring terms.

The elements of plane and solid geometry, involving the methods of proving theorems and solving problems, the relation of lines and planes in space, the areas of surfaces, the volumes of solids, the laws of variation in similar surfaces and solids.

TRIGONOMETRY.—Sophomore year, fall term.

The development and use of trigonometric formulae, the solution of right and oblique triangles and polygons; the elements of goniometry, logarithmic computation used throughout the course.

ANALYTICAL GEOMETRY.—Sophomore year, winter and spring terms.

The reference of points and lines to coordinate axes and the deduction of the equations of straight lines and of the curves of conic sections. Areas of surfaces in terms of the coordinates of points, general equations of the second degree. Solid analytic geometry. Text: Tanner & Allen.

ASTRONOMY.—Sophomore year, spring term.

A careful study of the celestial sphere, reference lines and astronomical measurements. The solar system involving a discussion of the size, density, rotation, revolution, and positions of the various planets and their satellites. Fixed stars, comets, nebulae, etc.

DIFFERENTIAL CALCULUS.—Junior year, fall term; four hours per week.

The subject is developed from the method of limits; infinitesimals are thoroughly discussed and their application to practical problems made clear. Rates, maxima and minima, partial differentiation, applications, etc. Text: Murray.

CALCULUS.—Winter and spring terms; four hours per week.

Continuation of differential calculus and integral calculus. Methods of reduction to known forms, with the most of spring term given to solution of practical problems in surfaces and volumes, center of mass, curves of stress, expansion of functions, and problems chosen from engineering life. Text: Murray.

Department of Chemistry, Metallurgy and Mineralogy

HARDEE CHAMBLISS, *Professor*
....., *Assistant*

This department occupies the entire Chemistry Building, which consists of two stories, basement and attic. One of the large, bright rooms on the first floor is fitted up for lectures and recitations. There is a lecture table conveniently equipped and arranged for demonstration and observation. The supply of apparatus and chemicals is quite extensive and the student's interest in the subject is first aroused then encouraged and stimulated. The lecture room has a seating capacity of about eighty. The remainder of the first floor is taken up with laboratories and balance rooms for quantitative work.

The office and private laboratory of the professor in charge is also on this floor.

On the second floor are laboratories for introductory work and qualitative analysis, the office of the assistant professor and two large store rooms. All desks are so equipped with bottles of reagents and with apparatus as to minimize the loss of time incident to a student leaving his desk for these articles; and even in the case of the more expensive instruments, materials and models for advanced students every effort is made to keep on hand a supply that will meet all reasonable demands and so prevent serious loss of time and enthusiasm on the part of the student.

The building is heated by steam and the gas for light and experimental use comes from a Terrill equalizing gas machine in the basement. The attic and basement of the building beside

containing store rooms and assay rooms, afford some space for growth of the department

In general it may be said that it is the policy of the department to maintain at all times those conditions which will promote order and a serious yet pleasurable interest in scientific work.

The work of the department consists of two main divisions:

1. The General Course taken by all Sophomores.

2. The Special Course taken by those who elect chemistry for their special work during the Junior and Senior years.

SUBJECTS

GENERAL COURSE

All students in all regular courses are required to take chemistry throughout the Sophomore year.

LECTURES AND RECITATIONS.—Sophomore year.

During the fall term the non-metals are studied and discussed in lectures and recitations three hours weekly. The winter and spring terms are devoted to a continuation of the work on non-metals and to the study of the more common metals and their compounds. As in the case of the fall term the time devoted to lectures and recitations is three hours weekly. The years' work in this course is designed to give a fairly comprehensive view of the fundamental principles of inorganic chemistry and to show that it is a growing science, an exact science and one that has a direct bearing on the phenomena of every day life. Furthermore the relation of chemistry to the arts and industries is carefully pointed out.

LABORATORY WORK.—Sophomore year.

In the fall term the work is confined almost wholly to the preparation of gases and salts and the study of their physical and simpler chemical properties. The quantitative relation between the gas or salt prepared and the amount of substance used in its preparation is shown to be always definite and invariable for the same substances, but what is insisted upon most is that the student shall take the time and the pains to perform each experiment carefully and to observe accurately for himself what happens regardless of what he expected to happen. He is taught to reason logically from observed facts and is thus shown the agreement of theory and practice; his notes are so kept as to bring out this relationship clearly and to fix it firmly in his mind. Time two afternoons a week during the year. While the laboratory period is from 1:30 to 3:30, it has always been the policy of the department to open the laboratories at 1:00 and allow the students to remain until 5:00. The laboratories are open from 8:00 a. m. to 5:00 p. m., and any student taking chemistry is encouraged to come in

and work provided it does not interfere with his other college duties and provided also he is orderly and serious. The text-book used is General Chemistry for Colleges by Alex Smith; A Course in Qualitative Chemistry by Green and VanDerkleed.

SPECIAL COURSE

Students may elect advanced chemical studies at the beginning of the Junior year and pursue this line of work during the remaining two years of their College course.

LECTURES AND RECITATIONS.—Junior year.

During the fall term of this year, in order to lay a good foundation for future work, there are three recitations each week on theoretical chemistry. The work in the winter and spring terms is organic chemistry, the Aliphatic compounds being first considered, after which the Carbocyclic compounds are taken up and carefully studied. In addition to the above work lectures are given on elementary Physical chemistry and calculations of Analytical chemistry three times a week during the spring term. Text-books: Remsen's Theoretical Chemistry, Perkin and Kippling's Organic Chemistry, Van Deventer's Physical Chemistry, Miller's Calculations of Analytical Chemistry, Olsen's Quantitative Analysis. In addition to these texts, the department is well supplied with standard works of reference covering the several lines of work taken up by the department.

LABORATORY WORK.—Junior year.

The laboratory work during the entire junior year is quantitative analysis. Two afternoons each week the first and second terms and three afternoons each week in the spring term. While the work follows the general outline of Olsen's Quantitative Analysis, the subjects of acidimetry and alkalimetry are given much more time and attention than the text indicates. Here it is found desirable to go much more fully into detail with reference to standard and normal solutions, a study of their preparation and the various methods employed to check up accuracy. This work is repeated, in part, in the Senior year.

LECTURES AND RECITATIONS.—Senior year.

In the fall term there is a general review one hour a week. No text is used, but the lectures and discussions are based upon material found in the numerous reference books in the department library. During the winter and spring terms industrial chemistry is taught three hours a week, and in the winter term four hours a week are devoted to metallurgy and assaying.

LABORATORY WORK.—Senior year.

The laboratory work of the Senior year, fall and winter terms, takes up the following preparations and determinations: Preparation of about twenty organic compounds; sugar analysis by the various gravimetric, volumetric, and polariscope methods; making up standard and normal solutions; complete water analysis; principal determinations in foods and feeding stuffs, i. e. sugar in

apples, starch in flour and potatoes, melting point of and salt in butter, gluten in flour; nitrogen, potash, and phosphoric acid in fertilizers; and a complete fodder analysis. The laboratory work of the spring term is given up almost wholly to working out a thesis along some chemical line.

MINERALOGY.—Senior year, fall term.

Four hours a week are devoted to this subject, mostly in the laboratory, although frequent recitations and tests are given as the work progresses. After the student has familiarized himself with general determinative methods and principles, he is given a selcted list of from fifty to sixty minerals which he must identify.

METALLURGY AND ASSAYING.—Senior year, winter term.

In addition to the text-book work in metallurgy, in the lecture room, one afternoon a week during the winter term is occupied in assaying gold, silver, copper, zinc, and lead ores; and while time and equipment will not permit an elaborate study of the broader principles of metallurgy, the student does become, more or less, familiar with the various processes used in assaying the simpler ores.

AGRICULTURAL CHEMISTRY.—Junior year, fall term, and Senior year, fall, winter, and spring terms.

All students in the agricultural courses take, in addition to the chemistry of the Sophomore year, in the fall term of the Junior year the same work the special chemistry students take—both in the lecture room and in the laboratory. During the Senior year all agricultural students and all special chemistry students take agricultural chemistry twice a week, in the lecture room, using as a guide some special text on the subject, supplemented by numerous lectures. In addition to the lecture-room work, the special chemistry and agricultural students work one afternoon a week in the laboratory, during the year, mostly along the lines of general experiment station agricultural analyses. The text-books used during the Senior year are as follows: Thorp's Industrial Chemistry, Sexton's Metallurgy, some standard work on determinative mineralogy—Crosby or Brush, Ingles Agricultural Chemistry.

Department of History and Political Economy

JOHN ALLEY, *Professor*

The study of history from the standpoint of general culture as well as that of specific educational value, is becoming increasingly appreciated. The aim of this department is to give, in so far as the limited time apportioned to it will permit, a general view of the social, economic and political development; to train the student *toward* original thinking, and to fit him for intelligently assuming the duties of citizenship.

The college library contains many valuable reference works. A number of important volumes have recently been added and the department will continue to add others as the courses demand and the available fund permits. The text book in each course is simply the basis for the term's work, and especially in the upper classes, considerable library reference work will be required. Lectures and student reports will supplement the courses.

SUBJECTS

GENERAL HISTORY.—Freshman year, fall and winter terms; four hours.

The object of this course is to furnish a broad foundation for future work in history and to give the student an elementary knowledge of the important features in the development of civilization, leading up to the beginnings of modern nations. Special attention will be given to Greek and Roman history. The story of Europe after the fall of Rome will be traced through the Charlemagne's Empire and the period of the crusades, up to the fall of Constantinople and the discovery of America. Only the essential facts will be developed, and the text will be supplemented by lectures and assigned readings in all courses.

ENGLISH HISTORY.—Sophomore year, fall term; three hours.

A brief survey of the rise and development of the English nation, with special reference to constitutional and economic features. This course is essentially an introduction to the study of American history.

AMERICAN HISTORY.—Sophomore year, winter and spring terms; four hours.

The first term's work will be confined to the study of colonial history, and the second term will continue the story of national development through the period of the formation of the union, the rise of political parties and national expansion. Required in the Science and Literature course.

EUROPEAN HISTORY TO 1815.—Senior year, fall term; four hours.

This course will begin with a brief survey of the beginnings of the European nations and will trace the development of these nations down to the Congress of Vienna.

RECENT EUROPEAN HISTORY.—Senior year, winter term; four hours.

Europe's history from the battle of Waterloo through the Nineteenth Century. Special reports by students on important topics in the reconstruction of Europe will be called for.

GOVERNMENT.—Senior year, spring term; four hours.

The principal portion of the work will be a study of the constitutional history of the United States. The interpretation of the constitution, the theories of Calhoun and Webster, and a brief survey of the American state and local governments will complete the course.

ECONOMICS, I.—Junior year, fall term; four hours.

A study of the elements of economics, which shall constitute only a brief treatment of the fundamental principles of the science. This course is a prerequisite to Economics II.

ECONOMICS, II.—Junior year, winter term; four hours.

Economical history of the United States. Special attention will be given to the effects of geographical and physical conditions on the national development.

SOCIOLOGY.—Junior year, spring term; four hours.

The elements of sociology. A brief treatment of the origin and development of social institutions and the fundamental principles of the science.

Department of Entomology

C. E. SANBORN, *Professor*
A. L. LOVETT, *Assistant*

This department now ocupies quarters in Morrill Hall. These quarters consist of an office and station laboratory, a lecture room for class use, and a student laboratory.

The equipment includes ten compound microscopes, consisting of one Bausch & Lomb "Professional", three Bausch & Lomb "BB6", six Zeiss "1VA", all with eye pieces and objectives complete. There are also two Zeiss compound demonstration and eleven Zeiss and Barnes dissecting microscopes. A full line of reagents, stains, glassware, and collecting apparatus is at the student's disposal. Models, prepared life histories, and mounted specimens of economic insects are available for observation and lecture work. Breeding cages and live boxes are provided for carrying on observation work in the field.

SUBJECTS

THE BIOLOGICAL ASPECTS OF ENTOMOLOGY.—Junior year, spring term.

This work consists of a systematic study of the biological aspects of insects. A careful study is made of anatomy and physiology

of insects; their adaptations to surroundings and the relations which they bear to man. The time devoted to laboratory work is taken up in a study of the external and internal structures, the physiology of metamorphosis, and the classification of some of our economic insects. This work is required in the Agricultural Division and is elective in the Science and Literature Division. Text: Entomology with Reference to its Biological and Economic Aspects—Folsom. Lectures and recitations two hours per week. Laboratory work, two afternoons per week.

The Economic Aspect of Entomology.—Senior year, fall term.

This term's work is devoted to a study of our economic insects; their life histories, habits, natural enemies, and means of combatting them. Field work and observations make the student acquainted with the insects, and enable him to recognize the best time and means of combatting. Laboratory work is of a nature to acquaint him with the remedies and how applied. This work is elective in the Science and Literature and Agricultural Divisions. Text: Smith's Economic Entomology. Various state and government publications are also at the student's disposal. Lectures and recitations, three hours per week. Laboratory work, two afternoons per week.

Scientific Entomology.—Senior year, spring term.

This term will be devoted to the collection and classification of Oklahoma insects, and a scientific study and grouping of them. This work is elective in the Science and Literature and Agricultural Divisions. Lectures and recitations, three hours per week. Laboratory work, two afternoons per week.

Household Pests.—Junior year, spring term.

This work consists of a practical study of the insects of the household and practical remedies for their control. Collections of the insects are made, and practical demonstrations in how to apply remedies are given. Thus the student becomes acquainted with the insect, and also the practical application of remedies for their control. Lectures and recitations, two hours per week. Laboratory work, one afternoon per week.

Department of Public Speaking

H. G. Seldomridge, *Instructor*

The aim of the course is to stimulate thinking, to develop the organic means of revealing thought—the voice and the body—by training them to be more flexible and responsive to the mind, or by bringing them under better control, and to secure a better knowledge of the right modes of execution and greater skill in their use. The work lays hold upon and develops the imagination, trains the intellect to grasp more keenly (in order to give

again), recognizes the emotional nature as the motive force in all life, and endeavors to make mind, voice, and body responsive to the soul.

SUBJECTS

1. VOCAL EXPRESSION (General Course).—Freshman year, spring term; two hours practicum.

   This course is devoted to action of the mind, voice and body in the expression of thought and emotion. The student receives vocal training and harmonic gymnastics. Required of all men in the Freshman class.

In the winter term of the Junior year, public speaking is an elective in the Science and Literature Division and a required subject in the Domestic Science and Arts Division. Students who take the work may select any of the following courses for which they are prepared:

2. ADVANCED VOCAL EXPRESSION.—Junior year, winter term; two hours practicum.

   The work seeks to develop the proper use of the imagination, control of the emotion, sympathetic identification, and an understanding of purposes in oratory. Special emphasis is laid upon the originality of thought and its value in the interpretation of literature. The voice is trained for range, flexibility and tone-color.

3. ARGUMENTATION AND DEBATING.—Junior year, winter term; two hours practicum.

   The student learns briefing and the details of argument, and practices actual debating.

4. EXTEMPORANEOUS SPEAKING.—Junior year, winter term; two hours practicum.

   The work aims to develop facility in thinking and speaking before an audience. Open only to such students as have passed in Course 1 with a grade of not less than C.

5. METHODS OF TEACHING READING IN THE PUBLIC SCHOOLS.—Junior year, winter term; two hours practicum.

   A course is given consisting of graded and progressive steps, with principles of training. Programs of exercises for the voice and practical problems adapted to the needs of pupils of the primary, grammar, and high-school grades are arranged. Students also receive training in thinking, vocal expression, and harmonic gymnastics.

NOTE.—In the course in public speaking two hours per week in the class room are given counting as one hour of credit.

TEACHERS' NORMAL DIVISION

The Normal Division of the Agricultural and Mechanical College assumes for its field the strictly professional and technical work, and the nature of this field determines the place and value of each subject offered. The handling of every subject has the teaching purpose strictly in view, the one aim being to develop a distinctive teaching atmosphere. The literary, scientific and industrial work required of the normal students is done in those departments of the College having special facilities and equipment for teaching these branches efficiently and with greatest economy to the prospective teacher.

The subjects of the Teachers' Normal Division are taught by the following departments:

The Department of Pedagogy.
The Department of Zoology and Veterinary Science. (See page 93.)
The Department of Mechanical and Electrical Engineering. (See page 77.)
The Department of Civil Engineering. (See page 82.)
The Department of Horticulture and Botany. (See page 58.)
The Department of Agronomy. (See page 61.)
The Department of Domestic Science. (See page 86.)
The Department of Dairying. (See page 65.)
The Department of English. (See page 96.)
The Department of German and Latin. (See page 98.)
The Department of Animal Husbandry. (See page 68.)
The Department of Bookkeeping. (See page 110.)
The Department of Music. (See page 116.)
The Department of Mathematics and Astronomy. (Page 100.)
The Department of Chemistry, Metallurgy, and Mineralogy. (See page 101.)
The Department of History and Political Economy. (See page 104.)
The Department of Public Speaking. (See page 107.)

SUBJECTS

History of Education.—Senior year, fall term.

A careful study of educational systems of primitive peoples. Oriental education, China as a type. Education for culture, Gre-

cian education as a type. The Renaissance and Humanistic education. The Reformation and religious conception of education. Modern educational systems, education in America, etc.

SCHOOL MANAGEMENT.—Junior year, winter term.

A study of the school as we find it. Classes of schools. Grades of schools. The changed conception of the school and its function. The relation of the school to society and the state. The teacher, his preparation and natural fitness. Courses of study adapted to different localities, etc. Text: Dutton.

METHODS AND MANAGEMENT.—Junior year, winter term.

The nature and scope of school work, the teacher, growth of teacher, physical conditions affecting the school, school organization, school government, school incentives, the curriculum, the recitation, reviews and examinations, affiliated interests, supervision. Text: Dutton.

PSYCHOLOGY.—Junior year, winter term.

Introduction and definition of terms. The method of psychology. Sensation, affection and feeling, attention, perception, emotion, simplex forms of action, memory and imagination, complex forms of action, abnormal psychology. Text: Titchener.

THEORY AND PRACTICE OF TEACHING.—Senior year, fall and winter terms.

A careful study of every condition that affects the school, with practical work in teaching under the supervision of the head of the Department of Pedagogy.

PHILOSOPHY OF EDUCATION.—Senior year, spring term.

The field of education, the biological, physiological, sociological, psychological and philosophical aspects of education. Text: Horne.

BUSINESS DIVISION

R. A. COVERDALE, *Principal*
A. S. LEE, *Assistant*

All the work of the business department is closely associated with the high grade class instruction given in the College course. Students desiring this course must pass fair examinations in reading, spelling, penmanship, geography, United States history, grammar, and arithmetic.

Applicants may be admitted to the department without examination on satisfactory records from the eighth grade of city schools or on diplomas from common schools.

All applicants for this course must have attained the age of eighteen years.

Students of more mature age may, with the consent of the president, take special courses consisting of just such subjects as they may elect.

Two courses of instruction are offered by the department, viz: (*a*) Business; (*b*) Stenographic.

The subjects of the Business Division are taught by the following departments:

The Department of Bookkeeping.

The Department of Stenography.

The Department of English. (See page 96.)

The Department of Mathematics and Astronomy. (See page 100.)

BUSINESS COURSE

The Business Course embraces bookkeeping, spelling, and penmanship, commercial law, commercial arithmetic, rapid calculations, and English. A brief description of the work follows.

BOOKKEEPING.

Since the principles of bookkeeping are constant, it is the aim of the department to so thoroughly familiarize the student with these principles that he can take charge of any set of books, and keep them intelligently and accurately. Text: Musselman's Practical Bookkeeping.

BOOKKEEPING, I.

The study of day book, commercial abbreviations, definitions of commercial terms, and simple transactions involving the principles of debit and credit. This is followed by a comprehensive drill on journal work. As soon as the student has done a sufficient amount of journal work, he is given a thorough drill in posting, taking trial balances, making balance sheets and closing the ledger. Upon completing this work, he is passed to

BOOKKEEPING, II.

In addition to the books already used, Bookkeeping II takes up the cash book, bill book, invoice and sales book, journal day book, six column journal and lumber book. This part of the work includes sets on general merchandising, retail grocery, corporation bookkeeping, hardware, lumber, wholesale, manufacturing, together with a set on single entry bookkeeping, which must be closed and changed to double entry. Regularly, this completes the fall term's work.

BOOKKEEPING, III.

Follows along the same line, with sets on commission and consignments, and banking. The commission set acquaints the stu-

dent with the method of handling shipments as they are handled in the best commission houses. The banking set is intended to familiarize the student with the principles of bank bookkeeping. The student learns the use of the various books—depositors' ledger, draft registers, pass book, cash book, daily statement, etc. This completes the work on the text. Upon completing the set in banking, the student is passed to the work in

ACTUAL BUSINESS.

At this point the class is resolved into a minature business world. Each student provides himself with the necessary books and business forms for carrying on an actual business. Each student is supplied with a cash capital sufficient to start him into business. He thereupon leases a building, buys, sells, insures, borrows money, keeps a bank account, ships goods by freight, and makes all trades possible that are common to business life. Thus imitating the business world, he puts into practice every principle of bookkeeping heretofore learned. He makes or loses money—either of which he must show on his books, and should contention arise over some dealing, may in mock trial, sue or be sued. Students in turn have charge of the bank, wholesale and commission offices.

CLASSES IN ACTUAL BUSINESS.

May be formed any term in which a sufficient number of students may have qualified. With a natural growth in attendance for the school year beginning in September, this department of the work will be carried continuously through the entire year. Text: Musselman's Actual Business Blanks.

PENMANSHIP.

The object of the work in penmanship is fourfold: First, to secure a good position of hand and body, and to secure a free and easy movement; second, to secure a knowledge of the forms of the letters; third, to secure such speed as is consistent with legibility and ease; fourth, the application of writing to other forms —especially business forms and correspondence. Stenographers and bookkeepers are required to take penmanship. Text: Zaner and Blorer's Compendium.

SPELLING.

All persons taking the business course must carry this subject. Thousands of positions are each year either not secured or lost on account of bad spelling. The value of spelling to the stenographer especially, is obvious. The same is almost equally true with the bookkeeper. The work in spelling is always written. Students are required to make a grade of 95 per cent on examination in the subject before securing diploma. Text: The Modern Business Speller.

COMMERCIAL ARITHMETIC.

The work covered by this subject is the same as that included in any first-class higher arithmetic. More than usual attention is

given to the solution of problems, and to the principles of arithmetic as well. The student is taught why as well as how. Text: White's Commercial Arithmetic.

COMMERCIAL LAW.

From a business standpoint, perhaps there is no subject in the course which is worth as much to the student as commercial law. This subject takes up contracts, negotiable paper, partnership, sale of chattels, interest, usury, wills, conveyances of real estate, mortgages, etc. The chief aim of this subject is to inform the student how to keep out of difficulties rather than to enable him to extricate himself after he is once involved. Text: Huffcutts Commercial Law.

ENGLISH.

The work is, in general, divided into three parts: Review of grammar and a thorough study of punctuation, a study of good English based upon Scott's Practical English, and a course in business forms. Throughout the course the primary aim is to develop the student's power of expressing himself in speech and in writing. Texs: The Mother Tongue, Book I; Scott's Practical English, and Modern Business Correspondence.

Stenographic Course

Students having a good common school education may finish the course in shorthand in one school year, nine months. The success and proficiency of the student will depend entirely upon his energy, ability, and previous training. The student who devotes nine months to this work is better prepared to take up the duties of an office or an amanuensis than the student who devotes only five or six months to it. The general requirements of a competent stenographer do not consist simply of the ability to write shorthand. There must be a knowledge of composition, punctuation, capitalization, grammar, spelling, and the proper arrangement of sentences. For this reason students are required before finishing the course to pass a satisfactory examination upon the subjects named above in addition to the regular examination in shorthand and typewriting.

The course embraces shorthand, typewriting, letter press copying, mimeographing, manifolding, etc., together with spelling, penmanship, and English.

SHORTHAND.

The work in stenography is divided into three parts, viz.: Theory, dictation and office practice.

THEORY.

By shorthand theory is here meant the part of stenography devoted to phonetic spelling, sounds of the letters, principles of the system, word signs, contractions and phrases. All of this work is based on the manual—the Gregg system being the one used. Texts: Gregg's Manual of Shorthand, and Barnes' Manual.

DICTATION.

The work of theory and diction are by no means separate and distinct, since dictation begins early in the theory work, and theory continues through dictation. However, the second division of the work is more largely dictation. During this period, much reading of shorthand is required in order to familiarize the student with forms and to increase the rapidity of reading notes. Before advancing to office practice, the student should develop sufficient ability to write from dictation at an average rate of seventy-five words a minute for a period of half an hour from new matter. He should also be able to write at the rate of one hundred words a minute for five minutes. Text: Gregg's Speed Practice.

OFFICE PRACTICE.

The work is what its name implies—office practice. As far as possible the students assist in getting out College bulletins and other matter for the different departments of the College. All of the office work of the Business Department is done by the students. A proper amount of attention is given to manifolding, mimeographing, letter press copying, etc.

TYPEWRITING.

The work in typewriting is necessarily closely connected with that in stenography. While the student is learning shorthand theory, he is also learning the key-board and the use of the various parts of the typewriter. He begins by writing short words; words are followed by sentences, and these by short letters. At this stage of the work, much repetition work is required. As soon as the key-board is mastered, the matter of transcription is taken up, and from this on, most of the time is devoted to the transcription of matter written from dictation. Through the entire course, neatness and accuracy is strongly emphasized. The touch system is used exclusively. For finishing, a speed of fifty words a minute from copy, and thirty words a minute from shorthand notes is required—the work to be free from error. Text: Rational Typewriting.

ENGLISH.

Same as in business course.

SPELLING AND PENMANSHIP.

Same as in business course.

OTHER DEPARTMENTS IN THE COLLEGE

Sub-Freshman Department

L. J. BARTON, *Principal*
ED MCCARREL, *Assistant*

The Sub-Freshman class is the preparatory department of A. & M. College. It purposes to give adequate preparation for entrance to the Freshman class of this College. The following is an outline of the work given:

ENGLISH.—Fall, winter, and spring terms.

The work of the fall term comprises a comprehensive review of English grammar. The work includes (1) a thorough study of the sentence with special emphasis given to complements, modifiers, conectives, phrases, and clauses; (2) a thorough review of the parts of speech with special emphasis given to form; (3) a welding of the work of (1) and (2) and a more exhaustive treatment of the modifying influence of other parts of speech upon these elements. One hour of each week will be given to capitalization, punctuation, and proof-reading. The work of the winter term comprises a study of practical English and has for its aim the checking up of the ordinary errors and slovenliness of speech —spoken and written. Scott's Practical English is the text used. This work is supplemented by frequent drills in letter forms, and composition-sentence-structure, paragraphing, diction, analysis of easy sentences, and the application of the principles of grammar in composition. One hour of each week will be given to the study of general reference books, such as encyclopedias, dictionaries, atlases, encyclopedias of special subjects, handbook of information, and indexes to periodicals and general literature. The work of the spring term is devoted to a study of Eliot's Silas Marner and Scott's The Lady of the Lake together with a study of an effective arrangement of the whole composition, paragraph development and the simpler phases of exposition. Actual practice constitutes the greater part of this work. One hour of each week will be given to the study of cataloguing and arrangement of books in the library. The purpose of this work is to train the student to obtain information quickly.

ALGEBRA.—Fall, winter, and spring terms.

The course is required of all regular students. A thorough drill in the elements of algebra, involving the fundamental principles, special cases in multiplication and division, factoring, fractions, simple, simultaneous and quadratic equations, involution, evolution, theory of exponents, inequalities, imaginary quantities, surds, etc.

LATIN.

Drill on essentials of Latin grammar, acquiring of vocabulary, English words derived from Latin, reading of stories from Roman history, anecdotes and fables. Five hours a week throughout the year. Text: Collar and Daniell's First Year Latin.

PHYSICAL GEOGRAPHY.

This is a text-book course including some laboratory work and using illustrative materials. Text: Gilbert and Brigham. Four hours, fall term.

BOOKKEEPING.

Study of commercial terms, commercial abbreviations, and day book forms. Much practical journal work. A thorough drill in posting, taking trial balance, making balance sheet, closing ledger, showing statement of losses and gains, resources and liabilities. In addition to regular day book, journal and ledger, the cash book, bill book, six column journal and single entry day book are used. One set in single entry is written up and the method of changing to double entry is illustrated.

PHYSIOLOGY.

An elementary course in physiology, given in lectures and recitations, supplemented by the use of models, skeletons, charts. Winter and spring terms. Text: Lessons in Elementary Physiology—Huxley.

CIVICS.

The work comprises a survey of the history of Oklahoma, including a brief history of the territorial government, followed by a comprehensive study of the township, county, and state government. The latter part of the term will be given to the national government with special emphasis upon the analysis of the constitution of the United States.

HIGHER ARITHMETIC.

A thorough course in advanced arithmetic, giving special attention to the application of the principles of percentage to solution of problems. All practical contracted methods are mastered, care being taken to discover the principles involved. Spring term.

ETYMOLOGY AND STRUCTURE.—Fall, winter, and spring terms.

A thorough study of word building, with special reference to the Latin and Saxon elements of the language.

Department of Music

I. ZACKHEIM, *Professor*
MADGE BOOKS SANDERS, *Piano*
H. A. IDE, *Band Leader*

Music makes broad claims upon the attention of students because of its generally recognized educational value, its cultured influence on the home life of the people, and its professional claims upon the more talented students of music.

The instruction in this department tends toward the musical education and training of a large portion of the student body and free instruction is offered all who desire to select music provided satisfactory progress is made from month to month in the subject.

Students in the Music department have access to all classes in the several departments of the College and to enhance their general culture, are required to take at least two or three studies throughout the school year, other than the work required in the regular music courses.

Accomplished musicians are always in demand as directors, singers, teachers, accompanists and organists for church, concert and public school music work. The Music department offers earnest students the opportunity to acquire scholarly musicianship.

The following courses enable the student to obtain a comprehensive and practical knowledge of music and to acquire skill and power in each interpretation. The time required for completing a course will depend upon previous preparation, the talent, ability, and character of the work of each student, but all have the privilege of advancing as rapidly as is consistent with good work. Students of the College will be permitted to study music only with instructors connected with the Department of Music.

SUBJECTS

VOICE.—First year.

Exercises will be given for correct breath control, purity of tone production, freedom of action and blending of registers, articulation and correct enunciation of vowels and consonants, elements of phrasing and style. Students will appear on program if required and will attend all recitals and rehearsals unless otherwise instructed, Two lessons per week, practice with instrument one hour or two hours daily. Sight reading and ear training, two hours per week. History of music, choir and chorus practice throughout the year.

VOICE.—Second year.

This course consists of exercise for tone placing, phrasing and style, legato, marcato and portamento delivery. Physiology of vocal mechanism, songs and exercises of medium grade in English, German or Latin. All students in this course and year will attend recitals and appear upon programs if required, singing from memory. Two lessons per week in voice, practice with in-

strument and without instrument, one or two hours daily. Two lessons per week in harmony and history of music. Choir and chorus practice throughout the year.

VOICE.—Third year.

This course is devoted to a study of tone color, agility, trill, messadi voce, phrasing and style, songs in English, German, Italian or French. All students are required to attend all recitals and rehearsals and appear upon programs when requested, singing from memory. Two lessons per week, in voice. Two lessons per week, harmony and counterpoint. Practice with instrument and without, one to three hours daily. One lesson per week, theory and composition. Choir and chorus practice throughout the year. (A certificate is granted those completing this course in a satisfactory manner.)

VOICE.—Fourth year.

This course embraces advanced work in vocal teaching by means of difficult exercises, songs, orators and operas, memory singing in public. Students are required to attend recitals and rehearsals and appear upon programs when requested. Two lessons per week, in voice, practice two or three hours daily. Choir and chorus practice throughout the year. (A gold medal will be granted those completing this work satisfactorily.)

PIANO.—First year.

In this course the students are requested to memorize and play with correct fingering, all major and both forms of minor scales. Legato in quarter and eighth notes. Major and minor chords in triads and four note form. Dominant seventh chord, four note form with all inversions played with sustained arm touch, hands separately. Figured chords in quarter and eighth notes. Octaves and staccato, octaves in any required scale, sight reading, etc. Two lessons per week, in piano. Two lessons per week, in harmony. Practice with instrument two to four hours daily.

PIANO.—Second year.

The work of this course requires the students to play from memory with correct fingering, all major, minor and chromatic scales. Major and minor trials, in full chords. Dominant and diminished seventh chords with their inversions. Broken chords played in quarter and eighth notes. Arpeggios form in major or minor triads. Metronome-quarter note 100. Staccato octaves in major scale, quarter and eighth notes. Sight reading, recognition of major and minor scales, and all intervals from the tonic of the major scales. Two lessons per week, in piano. Two lessons per week, in harmony. One lesson per week, in counterpoint. Practice with instrument, three to four hours daily.

PIANO.—Third year.

In addition to the work of the foregoing courses, the student must play from memory with correct fingering, major and minor scales, hands separately and together. Beginning one octave

apart, parallel and contrary motion, compass four octaves, in quarter, eighth and sixteenth notes. Triplet rhythms in quarter and eighth notes. Metronome quarter note to 120. Tempo scales studied to Metronome quarter note 120 to 130. Major and minor chords in triad and four note form, dominant and diminished seventh chord, four note form, extended and broken, with all inversions and in moderate tempo. Arpeggios formed on the major and minor chords. Be able to transpose easy hymns. Two lessons per week, piano. Two lessons per week, harmony and counterpoint. Practice with instrument, three to five hours daily.

PIANO.—Fourth year.

The technical test in this course will be similar to those in the previous courses except that the tempo will be increased. Exercises and scales in double thirds, fourths and sixths in parallel motion will be required to be played in quarter and eighth notes. Metronome 80 to 90. Sight playing and transposition. Students will be required to play at sight difficult compositions and must be able to transpose and play at sight in any given key, a simple hymn or chorale. For graduation students are required to perform perfectly under the direction of the Department of Music, a program not less than one hour in length which shall include two or more numbers equal in difficulty to any compositions in the list of Senior pieces:

1. Wagner.
2. Chopin.
6. Beethoven (Sonatas).
1. Moskowski.
1. Rubenstein.
2. Mendelsohn.
2. MacDowel.
1. Grieg.
1. Liszt.
1. Handel.
2. Mozart.
2. Weber.
2. Bach.

And others that may be selected by instructors. Two lessons per week, piano. Practice with instrument, three to five hours daily. To satisfactorily complete this course the student must fulfill the requirement above outlined. Students appear on programs when required and manifest musicianship, skill and poise.

THEORY.

This course will comprise systematic and progressive study in the elements of music. In this attention will be given to notation, scales, intervals, inversions, melody progression, tempo, dynamics, rythm and ear training. The advanced theory will deal with harmony and counterpoint and subdivisions thereof, concluding with form and composition.

VIOLIN.

A three years course will be given to students desiring to take lessons on the violin. Studies by Kreutzer and Sevsik. For graduation, students must play studies by Javinies, Wienini, Bach Sonatas, larger concerts of old and modern schools. Two years, harmony. One year, musical history. Analysis, counterpoint, orchestration and military band.

BAND.

Instruction will be given by regular College band leader in the use of brass, wood, wind and percussion instruments. To become a member of the College band the student must pass a satisfactory examination before the director as to knowledge of music and ability to perform on certain instruments before securing recommendation to the president for their transfer to the band. The members are required to attend practice three times per week and to perform in public by authority of the president. There is no charge for instruction in the band. The College furnishes instruments, music and music stands to members of band and orchestra. Other students pay one dollar per month in advance for instruments used in practice when furnished by the College. Those desiring private lessons in band instruments will consult with the director of the department.

WIND INSTRUMENTS.

Students wishing to take lessons on any wind instrument, require two lessons per week on instrument, two years' harmony, one year theory, analysis, counterpoint, orchestration and military band.

ORCHESTRA.

Any College student who plays on any string or wind instrument has the privilege of the orchestra on approval by the Director of Music.

Department of Physical Education

W. E. SCHREIBER, *Director*
MISS E. J. ROSS, *Director for Women*
ED. C. GALLAGHER, *Assistant*
P. J. DAVIS, *Athletic Coach*

Much of the success of a young man or woman in college and after graduation depends on good health. The Department of Physical Education aims to create and maintain a vigorous state of health in all of the students of the College. It strives to keep them in the best possible physical condition for and during their college course and to lay the foundation for proper living after graduation. It aims to teach the principles of hygienic living and the care of the body.

The men's gymnasium is a well lighted room 45x65 and contains all of the necessary apparatus for gymnasium work. There is in connection a locker room and well equipped shower room for hot and cold baths. The outfitting has been done with the idea of giving the students the advantages to be found in any college gymnasium. Dumbbells, barbells and clubs will be found

there in plenty for class drills, and for the heavier apparatus work there are the horse, parallel bars, rings, horizontal bar, mats, standards, etc. The students of the first two years are required to do a certain amount of work in the gymnasium, for which they receive credit necessary for graduation. These requirements may be modified to some extent in the cases of young men who in order to help meet expenses are performing labor on the farm or elsewhere.

An athletic field for football, baseball, track and field athletics, tennis courts and outdoor basket ball courts are provided by the College, and students are encouraged to take part in athletics and out-of-door exercise. Varsity teams are organized and maintained by the Athletic Association and each team is under the supervision of a trained instructor.

The new gymnasium for women, to be located in the Women's Building, which is to be erected during the summer of 1909, will be an unobsructed room 32x63 feet and equipped with all the modern gymnastic apparatus. There is a locker and dressing room in connection, supplied with 75 steel lockers. There are also a large number of shower baths and a swimming pool. For those desiring to do out-of-door work there is provided an enclosed court 50x100, erected by the Girls' Athletic Association. This court is fitted for all kinds of out-of-door games and gymnastic exercises.

COURSES FOR MEN

COURSE 1.—Physical Examination.

A thorough physical examination is required of all entering students. This examination consists of measurements, strength tests, examination of the eyes, ears, nose, throat, lungs, heart, and other vital organs, and special stress is laid upon physical deformities and inequalities. These defects are pointed out to the student and exercises to correct them are prescribed. Where necessary, special attention and advice are given to the student. An examination is taken at the beginning and at the end of the first year and at the end of each year after that. (Professor Schreiber.)

COURSE 2.—Required of the Sub-Freshmen of the College, fall, winter and spring terms.

This work consists of mass class drills with dumbbells and barbells with deep breathing and abdominal mat work. Elementary apparatus work is given on the horse and parallel bars during the fall and winter terms and is replaced during the spring term by

out-of-door track and field athletic work. Tennis and baseball are also substituted. Three hours' work a week. Credit given, and required for graduation. (Professor Schreiber and Mr. Gallagher.)

COURSE 3.—Required of the Freshmen of the College, fall, winter, and spring terms.

The work of the Freshman classes consists of mass class drills with the dumbbells, barbells and Indian clubs with elementary apparatus work on the flying rings and horizontal bar and advanced work on the horse and parallels. In the spring term the out-of-door work of Course 2 replaces the apparatus work. Three hours a week. Credit given, and required for graduation. (Professor Schreiber.)

COURSE 4.—Open to the students of the Short Course in Agriture, fall and winter terms only.

The work of this class will consist of the mass drills and light elementary apparatus work and will deal more with the coordinative side of physical training than the developmental. The class is maintained during the fall and winter terms only. Two hours' work a week. Credit given, and required for graduation. (Mr. Gallagher.)

COURSE 5.—Special Classes. Open to all students.

5 A. Cross-country running. During the fall and spring terms those students desiring to do so may substitute a certain amount of cross-country running for the regular gymnasium work. (Mr. Gallagher.)

5 B. Wrestling. A class in wrestling, in which all of the holds, breaks, counters are given, is formed. A student may substitute one hours' work a week in wrestling for one hour of his regular class work. (Professor Schreiber.)

5 C. Boxing. A class in boxing in which all of the blows, parries, guards and counters are given, is formed. A student may substitute one hours' work in boxing for one hour of his regular class work. (Professor Schreiber and Mr. Gallagher.)

5 D. Special Class. A special class is formed for those who on account of deformities are unable to take the regular work of the department. The work of this class is suited to the needs of the individual. (Professor Schreiber.)

COURSE 6.—Advanced Gymnastic Class. Open to all students.

A special class is formed for those students who desire to do advanced work on the horse, parallel bars, horizontal bars, flying rings, mats, tumbling and club swinging, and for the leading of gymnasium squads. This comprises the regular gymnastic team for exhibition purposes. Three hours' work a week. Full credit given. (Professor Schreiber and Mr. Gallagher.) Each class drill is preceded by a few minutes' talk on some subject of vital interest to the student, with the idea of helping him in hygienic living.

ATHLETIC.

Teams are maintained in football, baseball, track and basket ball. During the time any student is a member of one of the above teams he will be excused from all gymnasium work and will be given credit therefor. (Football, Mr. Davis; track, Mr. Gallagher; baseball and basket ball, Professor Schreiber.)

Each student must provide himself with a gymnasium costume, so that there can be a complete change of clothing for the work. This suit consists of a sleeveless shirt (white or black), running trousers and soft-soled shoes. These can be procured at a local store at a cost not to exceed three dollars, the price depending on the grade of the material.

Lockers are provided for the students for which a fee is charged. A small deposit is charged for the use of the key, which deposit is returned when the key is handed in.

PHYSICAL EDUCATION FOR WOMEN

At the beginning of the fall term each young woman is given a careful physical examination. Personal history, measurements and examination of vital organs are taken and recorded. This examination is repeated during the spring term and comparison with the average young woman is made at both times.

Suggestions for special work suited to the needs of the individual are based on this examination.

The regulation gymnasium costume is required. In order that they may be uniform in pattern and color, the suits will be ordered by the College. The cost of this suit, including shoes, is about five dollars.

1. INTRODUCTORY.—Swedish system of gymnastics.

Floor work emphasizing carriage and co-ordination of muscles. Movements with apparatus, progressive back and abdominal exercises, Indian clubs, dumbbells, jumping, wands, military marching, gymnastic games. Required work for students in the Sub-Freshman, business and short courses in agriculture and domestic science classes. Three hours' work a week. (Miss Ross.)

2. ADVANCED COURSE.—Continuation of Course 1.

Floor work, apparatus with more advanced work than in Course 1, vaulting horse, vaulting box, and boom, marching and gymnastic games. Required of students of the Freshman class. Three hours a week. (Miss Ross.)

3. CONTINUATION OF COURSE 2.—With more advanced work.
Required of students in the Sophomore class. Three hours a week. (Miss Ross.)

4. ESTHETIC GYMNASTICS.
Systematic exercises in arm and body movements combined with fancy steps to develop co-ordination and grace. Electives for Juniors, Seniors and Specials. (Miss Ross.)

5. SWIMMING, TENNIS, HOCKEY, BASKET BALL AND CROSS COUNTRY WALKING.
For all classes during October, April and May. (Miss Ross and Assistants.)

6. MASSAGE AND MEDICAL GYMNASTICS.
Elective for Juniors, Seniors and Specials. (Miss Ross.)

7. SPECIAL GYMNASTICS.
For students who are unable to take either Course 1 or 2. (Miss Ross.)

Military Department

IRA F. FRAVEL, *Commandant*
First Lieutenant 24th U. S. Infantry

This institution being one of the beneficiaries of the act of Congress of 1862, instruction in military tactics is made compulsory.

The department is in charge of an officer of the United States Army, detailed by the War Department, as professor of military science and tactics.

Military discipline is exercised with firmness, kindness and justice. It tends to cultivate habits of punctuality, alertness and the sense of personal responsibility. It helps the student to prepare himself the better for any position in life, because employers like to find men who are imbued with the idea of doing exactly as they are instructed by one authorized to direct them, and who have been trained to exercise quick yet sound judgment in any emergency that arises concerning which they have no definite instructions. These qualities are thoroughly inculcated in any person by a military training such as this College endeavors to give. In

addition the drills give a graceful carriage to the student, assist in the promotion of the health of the individual, and are an added benefit to the other gymnasium work given in this College.

COURSE

The course of instruction is made to conform strictly to the provisions of General Orders No. 155, War Department, 1907. In compliance with the requirements of that order, the course will be both practical and theoretical, and will be applied as follows:

(*a*) PRACTICAL.—All classes. (Two hours per week.)

1.—Infantry drill regulations, through the school of the regiment, in close and extended order.
2.—Advance and rear guards and outposts.
3.—Marches.
4.—The ceremonies of review, inspection, parades, escort of the color, guard-mounting, etc.
5.—Gallery practice.
6.—Target practice.
7.—Field problems with blank ammunition.

(*b*) THEORETICAL.—(One hour per week.)

Sub-Freshmen and Business Classes.—Fall and winter terms: Infantry Drill Regulations, 1904, to include the school of the company. Spring term, Small Arms Firing Regulations, Parts 2 and 3.

Freshmen.—Fall term: Small Arms Firing Regulations, part 8. Winter and spring terms: Field Service Regulations, 1905, to include par. 353.

Sophomores.—Fall and winter terms: Field Service Regulations, 1905, pars. 354 to 817. Spring term: Infantry Drill Regulations, 1904, to include the school of the battalion.

Junior.—Fall term: Infantry Drill Regulations, 1904, to completion. Winter term: Manual of Guard Duty, 1908. Spring term: Signalling.

Seniors.—Entire year: Outlines of First Aid to the Injured, Care of Sick, etc.

Satisfactory completion of the prescribed work is required before graduation.

Students entering from other institutions where officers of the army are detailed will be given credit for any theoretical work for which they hold certificates, provided they are not afterwards found deficient in the practical work in the subject.

EQUIPMENT

The War Department has supplied the College with 450 U. S. magazine rifles, caliber .30, of the Krag-Jorgensen pattern, and 450 sets of infantry equipment. Swords, target supplies, and annual issues of ball, blank, and gallery cartridges are also received from the War Department.

UNIFORM

All male students are required to purchase a uniform through the College. The College has entered into a contract with a reliable uniform house whereby the uniform can be purchased cheaper than if the students were required to purchase same direct. The uniform (coat, cap and trousers) costs $13.95. With the uniform any black high shoe may be worn, but a white military collar is required. White gloves are required when under arms and white cuffs at inspections.

The uniform will give more wear than an ordinary civilian suit costing the same money. It is made of an excellent grade of 16 and 18 ounce Charlottesville woolen goods of a dark blue color for the officers, and gray for the noncommissioned officers and privates. Each suit is tailor-made to individual measure and a correct fit is guaranteed by the contractor.

ORGANIZATION

All young men are required to enroll in the military department if physically able to take the work.

The Corps of Cadets has been organized into a battalion of five companies and a band, but an organization consisting of two

battalions of four companies each, in addition to the band, is contemplated for the coming year.

Upon appointment officers and noncommissioned officers are given commissions and warrants respectively. These are signed by the president of the College and the commandant of cadets. Officers whose service has been satisfactory are given a genuine parchment commission on their graduation.

Upon the graduation of each class, the names of such students as have shown special aptitude for military service are reported to the adjutant general of the army and to the adjutant general of their state.

ROSTER OF THE CORPS OF CADETS—1908-9

Commandant of Cadets:

FIRST LIEUTENANT IRA F. FRAVEL, Twenty-Fourth United States Infantry

Staff:

1ST LIEUTENANT ORA L. HEMPHILL, Battalion Adjutant

2ND LIEUTENANT EARL E. VEZEY, Battalion Quartermaster and Commissary

Noncommissioned Staff:

Harry E. Wilson, Battalion Sergeant Major
Frank C. Hamilton, Quartermaster Sergeant
Walter B. Jesse, Color Sergeant
Robert R. Stebbins, Color Sergeant

	COMPANY A	COMPANY B	COMPANY C	COMPANY D	COMPANY E	BAND
Captains	M. R. BENTLEY	E. C. GALLAGHER	F. A. GOUGLER	OLLIE NEEDHAM	C. W. CRAWFORD	Leader: H. A. IDE
1st Lieutenants	L. C. MITCHELL	H. U. CLOUKEY	C. K. BULLEN	W. L. LAHMAN	G. M. GAASCH	Chief Musician: H. C. BOUTIN
2nd Lieutenants	R. V. LINDSEY	J. M. SPEIDEL	F. J. TIBBETTS	C. M. WOODWORTH	J. G. FISHER	Drum Major: W. S. DORMAN
1st Sergeants	W. E. Camp	N. M. Faulds	H. S. Allen	G. A. Hoke	F. P. Funda	
Sergeants	J. K. Ross W. T. Potter F. A. Reed F. J. Selement	E. R. Kooken C. M. Oursler J. W. Albright C. R. Smith	R. A. Pochel W. A. Hubler C. M. Overman R. E. Clausen	J. H. Hamilton J. E. Larson C. L. McArthur R. J. Hamon	L. M. Neuman L. E. Hildebrand R. E. Kenyon H. E. Bonnett	F. H. Ives C. S. Jones
Corporals	R. N. Allen B. C. Bullen J. C. McIntyre J. G. Selders Roll Ginter N. E. Winters	W. Beauchamp A. J. Wildman J. D. McBride I. Cole B. O. Clausen	F. L. Knoblock L. M. Masemore C. S. Merydith T. W. Duck G. E. Weaver W. J. Burke	Mac Hoke H. S. Liecht C. P. Trueax J. L. Allen Glen Lee	F. A. Pribbenow S. L. Jeffords E. H. Brewer R. C. Shiflett H. T. Buchanan	W. H. Austin C. W. Hopps O. T. Straub Guy Williams H. B. McClintick
Musicians		R. A. Harcourt	I. A. Harcourt			

BEST COMPANY, 1909

Company E, (Captain Charles W. Crawford.)

Captain presented with a sabre and the letter of the company and name of the captain will be engraved on a silver band placed on pike of College flag.

RESULT OF GALLERY PRACTICE

		Percentage
1.	Staff and Band	78.10
2.	Company B	74.38
3.	Company D	70.51
4.	Company A	67.82
5.	Company C	67.68
6.	Company E	67.54

TEN BEST INDIVIDUAL SCORES IN GALLERY PRACTICE

	Percentage
Speidel, J. M., 2nd Lieut. Co. B	87.2
Vezey, E. E., 2nd Lt. & Batt. Q. M. & C.	87.2
Gallagher, E. C., Captain Co. B	86.8
Pochel, R. A., Sergeant Co. C	86.8
Allen, H. S., 1st Sergeant Co. C	86.0
Fix, Fred I., Private Co. B	85.6
Talbot, A. E., Private Co. D	84.8
Wilson, H. E., Batt. Sergeant Major	84.8
Cook, R. B., Private Co. D	84.8
Clark, C. L., Private Band	84.8

RESULT OF COMPETITION

(Between teams of five best shots from each organization.)

		Score
1.	Company E	1164
2.	Staff and Band	1147
3.	Company B	1103
4.	Company A	1084
5.	Company C	967
6.	Company D	943

FIVE HIGHEST INDIVIDUAL SCORES IN COMPETITION

(Possible score 300.)

Fix, Fred I., Private Co. B	254
Blue, True C., Private Co. E	251
Selement, Frank J., Sergeant Co. A	248
Vezey, E. E., 2nd Lt. & Batt. Q. M. & C.	245
Ford, W. W., Private Co. D	243

Department of Agriculture for Public Schools

T. M. JEFFORDS, *Professor*

This department seeks to assist the teachers of the public schools of our state in teaching agriculture to their pupils in the most effective and interesting manner. Every effort is made to keep in close touch with the work of teachers in the common schools and high schools by visiting the schools, by correspondence and by attending teachers' institutes. Through this department the College seeks to convey information of real professional worth to all of the teachers of Oklahoma by presenting fresh facts and useful methods relating to the teaching of agriculture and domestic science required by the state Constitution to be taught in all the public schools of Oklahoma.

This department offers help to teachers as follows:

OUTLINE MAPS OF OKLAHOMA

These maps are free and measure 16x21 inches. The wideawake teacher will find many ways to use them. Especially useful in physical geography.

UNITED STATES DEPARTMENT OF AGRICULTURE LITERATURE FOR TEACHERS

These leaflets help the teacher over many difficulties encountered in teaching agriculture. If assistance is wanted in some part of the work, as soils, trees, insects, beautifying the school house or grounds, write us, and the proper bulletin will be sent.

LECTURES FOR COUNTY TEACHERS' INSTITUTES

County Superintendents are invited to make use of our facilities for furnishing lecturers for institutes. Services are free.

OKLAHOMA LITERATURE FOR TEACHERS

At intervals leaflets are issued for teachers instructing classes in domestic science, agriculture, and natural sciences. These are practical helpers and adapted to Oklahoma conditions.

SUMMER NORMAL COURSES IN ALL REQUIRED SUBJECTS

begin in June. The A. & M. faculty, buildings, and equipment are at the service of teachers for this course. No entrance examination or fees.

A FOUR YEARS' COURSE IN PEDAGOGY FOR TEACHERS

Graduates are given state life certificates. Other departments are open to teachers pursuing the Normal Course.

Department of District Agricultural Schools

B. C. PITTUCK, *Dean*

An act of the First State Legislature of Oklahoma, approved May 20, 1908, provided for the location and establishment of an agricultural school of secondary grade in each of the five State Supreme Court Court Judicial Districts. The location, operation and equipment of these schools are under the supervision of the State Commission of Agricultural and Industrial Education, consisting of the State Superintendent of Public Instruction, E. D. Cameron; the President of the State Board of Agriculture, J. P. Connors; and the President of the A. & M. College, J. H. Connell. The State Board of Agriculture exercises a general oversight of these and like schools under constitutional and statutory provisions.

The Connors State School of Agriculture, Warner, Okla., represents the First District, J. A. Liner, President.

The Murray State School of Agriculture, Tishomingo, Okla., represents the Second District, Jas. A. Wilson, President.

Four additional schools will be located this fall—one each for the Third, Fourth, Fifth, and Panhandle Districts.

As the course of study in these schools is planned for the boy and girl of the farm, no course other than an industrial one is offered. This course, however, is of such a nature that the A. & M. College and the State Normals will give credit for work done should the student desire to take up more advanced studies.

SPECIMEN ENTRANCE EXAMINATION QUESTIONS

Those desiring to enter the regular College courses and who have no common school or high school diplomas will do well to carefully examine the list of specimen questions herein set forth and satisfy themselves that they can answer such questions before applying in person at the College for admission to Sub-Freshman, Freshman or Sophomore classes. No examinations are required for admission to the Business Courses or to any of the Short Courses in Agriculture and Domestic Science.

SUB-FRESHMAN CLASS

Arithmetic

Prepare the combinations of six. When should the idea one-half be introduced?

There are 44 cattle in a pasture, and the number of cows is 4-5 of the number of calves. How many of each?

When gold was 20 per cent more than currency, what was the value of the dollar bill?

At 66 cents a bushel, what is the value of the wheat which fills a bin 6 feet long and 5 feet square at the ends?

I buy 10 shares of 3 per cent stock at 80. What is my income?

Grammar

Write the plural for each of the following: Church, ax, fife, cuff, axis, datum, nebula, sheaf, penny, alley, son-in-law.

Name all the different classes of pronouns and give two examples of each.

(a) Use an infinitive as the subject of a sentence. (b) As an object of a transitive verb. (c) As the subjective complement.

(a) Principal parts: see, sit, set, lie, lay, come, burst. (b) Pluralize: for-get-me-not, father-in-law, deer, it, genius.

Decline in singular and plural, I, man, which, he, John What is voice? Change the voice in the following sentence: John discovered coal on his farm.

United States History

Compare the colonists of Virginia and Massachusetts as to ancestry, religion and occupation.

Name three important inventions and show their effect upon our industries.

Discuss causes of the Civil War: as to different constructions of the Constitution and different systems of labor in North and South.

Give cause of, and extent of the application of the Emancipation Proclamation.

Give four of the principal issues of the campaign of 1908.

Geography

Discuss the climate, elevation, and rainfall of Oklahoma.

Name five Indian tribes in Oklahoma and tell where each is found.

(a) Name the New England States and give the capital of each.
(b) Name five important industries of this section.

Discuss the drainage of North America and name eight important rivers.

Discuss briefly the foreign possessions of United States.

Name the planets in their order from the sun.

FRESHMAN CLASS

Algebra

(*a*) $(x+y)^2$, (*b*) $(2a+3b)^2$, (*c*) $(2a+3b)^3$.

(*a*) $(x^5-y^5)\div(x-y)$, (*b*) $(x^7+a^7)\div(x+a)$.

Factor:

(*a*) $a^2-b^2x^2$, (*b*) $1-x^4$, (*c*) a^4+4, (*d*) x^2-x-30.

What is that number which when divided by three is equal to one-quarter of the sum of itself and twenty-five?

$$2x+3y+4z=20.$$
$$3x+4y+5z=26.$$
$$3x+5y+6z=31.$$

Multiply:

(*a*) $2+\sqrt{5}$ by $2-\sqrt{5}$

(*b*) $3-\sqrt{15}$ by $2+\sqrt{5}$

Literature

Give from memory a list of the literature you have read as a part of your school work since completing the eighth grade. Supply also other information as suggested by the following form:

Literature Studied	Is It Prose or Poetry?	Further Classify It; for example as Novel, Oration, Lyric, Poem, etc.	Author	Nationality of Author
1				
2				
3 etc.				

English

Describe the embarkation in "Evangeline."

Which was the shrewder person, Brutus or Cassius? Give solid reasons for your answer.

Discuss briefly the effect of the coming of Eppie upon Silas Marner.

Who or what was each of the following: (Answer each in not more than ten words).

The Styx	Hercules	Pandora
Achilles	Prometheus	Charon
Psyche	Paris	Juno

Composition

What is a paragraph? Tell how it is constructed and how it is separated from other paragraphs on the page.

Write a one-page or two-page theme explaining how to play some simple and familiar game.

Physiology

Name three kinds of joints; state what movements are possible in each; and name the structures constituting a perfect joint.

In a pen or pencil sketch, show the divisions of the skin and the different structures it contains.

Trace a piece of cooked potato from the time it enters the mouth until it is thrown off from the lungs as carbonic acid gas and water.

Distinguish between fractures, dislocations and sprains.

Name and give the use of eight different parts of the eye-ball.

Physical Geography

Discuss young, mature, and old valleys and tell how we can estimate the age of mountains.

(a) Discuss erosion. (b) name six agents of erosion.

Name two important classes of rock and tell how each are formed.

Discuss underground currents and the formation of lakes.

Discuss the effect of climate, elevation, etc., on plant and animal life.

SOPHOMORE CLASS

Geometry

Define: Diagonal of a polygon; similar arcs; radius of a polygon; spherical wedge; altitude of a prism; right circular cone.

Find the centers for the inscribed circle and the circumscribed circle in the triangle A B C. Prove your construction.

The diameter of a circular grass plot is 28 feet. Find the diameter of a circular grass plot just twice as large.

The sum of the face angles of any convex polyhedral angle is less than four right angles. Prove.

Show how to divide a given rectangle into four equivalent parts by lines drawn from one of the vertices of the rectangle. Give proof.

Advanced Algebra

Solve:

(*a*) $5x+3y-6z=4.$
$3x-y+2z=8.$
$x-2y+2z=2.$

Extract the square root of:

(*a*) $x^4+4x^3+2x^2-4x+1.$

(*b*) $9a^2-6ab+30ac+6ad+b^2-10bc-2bd+25c^2+10cd+d^2.$

Solve:

$$\left\{\frac{(x+3b}{8a^2-12ab}-\frac{3b}{9b^2-4a^2}-\frac{a+3b}{(2a+3b)\ (x-3b)}\right.=0.$$

Solve:

(*a*) $-\begin{cases} x^3+y^3=2728. \\ x^2-y+y^2=124. \end{cases}$

(*b*) $-\begin{cases} \dfrac{x+y}{x-y}-\dfrac{x-y}{x+y}=\dfrac{89}{40}. \\ 6x=20y+9. \end{cases}$

Solve:

(*a*) $\sqrt{3+x}+\sqrt{x}=\dfrac{6}{\sqrt{3+x}.}$

(*b*) $\sqrt{\dfrac{x}{4}}-3+\sqrt{\dfrac{x}{4}-3}=\sqrt{\dfrac{2x}{3.}}$

By use of tables, find logarithms of :

706 33, 0.0897, 1.0001, 99, 778.

If a:b::c:d, prove that

(a) ma:nd::mc:nd

(b) ma—nd:ma—nb::mc—nd:mc—nd.

Physics

Define: Extension; impenetrability; porosity; density.

State Pascal's law. Describe the hydraulic press.

State Boyl's law. Describe a simple form of air pump.

How find the specific gravity of a solid?

Define: Work; energy; power.

Latin

What must you know in order to be able to decline a noun?

Name four important classes of i-stem nouns and tell in what cases their endings differ from those for consonant stems.

How are the conjugations distinguished?

What is a deponent verb?

Decline: Dea, fortior, amans, felix, calcar, mare, quis, sui.

Give in full the imperative, infinitives and participles of reg.

Translate: Deinde Eurystheus Herculi laborem hunc graviorem imposuit. Augeas quidam, qui illo tempore regnum in Elide obtinebat, tria milia bonum habebat. Hi in stabulo ingentis magnitudinis includebantur; stabulum autem inluvie ac squalore obsitum est; neque enim ad hoc tempus umquam purgatum erat. Hoc issus est Hercules intra spatium unius diei purgare. Ille, etsi res erat multae operae, negotium suscepit. Primum magno labore fossam duodeviginti pedum fecit, per quam fluminis aquam de mortibus ad murum stabuli perduxit. Tum, postquam murum perrupit, aquam in stabulam immisit; et tali modo contra opinionem omnium opus confecit.

Literature

When, where, and for what purpose was Burke's speech on conciliation delivered?

Tell briefly some of the most important ideas you have gained from Bacon's essays.

Tell what you can of the passage in either of Webster's Bunker Hill orations which seems to you the most worth remembering.

Point out clearly the difference between the essay and the oration, illustrating what you say by reference to essays and orations studied.

Composition

Discuss briefly the difference between exposition and argumentation.

Write a one-page descriptive theme.

ALUMNI

ORGANIZATION FOR 1909-10

W. L. BURLISON, '05, Stillwater.....*President*
W. L. ENGLISH, '05, Stillwater.....*First Vice-President*
GEO. W. HOOVER, '03, Washington, D. C.....*Second Vice-President*
EMMA A. CHANDLER, '06, Tishomingo.....*Secretary*
CHESTER H. LOWRY, '02, Stillwater.....*Treasurer*

EXECUTIVE COMMITTEE

Officers of the Association

M. J. OTEY, '02,.....*Stillwater* ROBERT BILYEU, '05, *Stillwater*

Following is a list of the graduates of the College by classes, and in each case the address and occupation is given as correctly as the Secretary's records show. It is especially desired that all graduates advise the Secretary of changes in address and occupation.

1896

Arthur W. Adams, Real Estate Agent.....Ardmore, Okla.
J. Homer Adams, Real Estate Agent.....Ardmore, Okla.
Frank E. Duck, Farmer.....Stillwater, Okla.
A. Edward Jarrell, Santa Fe System.....Pueblo, Colo.
Erwin G. Lewis, Vice-President, Ramona State Bank.....Ramona, Okla.
Oscar M. Morris, Professor of Horticulture, A. and M. College.....Stillwater, Okla.

1897

Jessie O. (Thatcher) Bost, At Home.....Freedom, Okla.
George W. Bowers, Railway Conductor.....Enid, Okla.
Andrew N. Caudell, Entomologist, Department of Agriculture.....Washington, D. C.

1898

John T. Clark, Treasurer of Mindanao Province.....Cagayon, Philippine Islands
Augustus G. Ford, Promoter.....Stillwater, Okla.
Norris T. Gilbert, Banker.....Lawton, Okla.
Thomas J. Hartman, Cashier, Bank of Commerce.....Sulphur, Okla.
Clinton Morris, Iron Foundry Chemist.....Goodrich, Tenn.
Emma H. (Swope) Dolde, At Home.....Leavenworth, Kans.
Blanche (Wise) Diggs, At Home.....Stillwater, Okla.

1899

Noah P. Ballock, Merchant.....Fairview, Okla.
Clarence R. Donart, Bank Cashier.....Altus, Okla.
Minnie A. (Dysart) Teter, At Home.....Pawnee, Okla.
Francis M. Greiner, Chemist Iron Works.....Ensley, Ala.
Cora A. Miltimore, Librarian, A. and M. College.....Stillwater, Okla.
S. Earl Myers, Real Estate Agent.....Guthrie, Okla.
Arthur B. McReynolds, Publisher and Editor.....Guadalupe, Calif.
*Charles E. Regnier.....Stillwater, Okla.

1900

Arthur W. Anderson, Lawyer.....Woodward, Okla.
Cora M. (Donart) Coffey, At Home.....Lawton, Okla.
Thomas T. Goff, Instructor in Gem City Business College.....Quincy, Ill.
John S. Malone, Farmer.....Stillwater, Okla.
Louis C. Miller, Chief, Division Forest Planting.....Denver, Colo.
Geo. W. Stiles, (M. D., George Washington University) Bureau of Chemistry, Department of Agriculture.....Washington, D. C.

1901

R. Bradford Hurst, Hospital Steward, U. S. Navy.....Washington, D. C.
Kate A. Jewett, At Home.....Udall, Kans.
Charles L. Kezer, Superintendent of City Schools.....Stillwater, Okla.
Arthur C. Lewis, Assistant State Entomologist.....Atlanta, Ga.
Velma (Walker) Swinford, At Home.....Stillwater, Okla.

1902

A. Bondy Anderson, Inspector, Motive Power Department, Santa Fe Railway System.....Topeka, Kans.
Sarah S. Carson, Teacher.....Stillwater, Okla.
A. Warren Flower, Railway Service.....Deer Creek, Mont.
A. Gertrude Hunt, Durant Normal.....Durant, Okla.
George M. Janeway, Cashier, Bank of Skiatook.....Skiatook, Okla.
Charles V. Jones, Lawyer.....Clay Center, Kans.
Ralph Kratka.....Keifer, Okla.
Chester H. Lowry, Lawyer.....Stillwater, Okla.
Samuel A. McReynolds, Railway Mail Service.....Joplin, Mo.
Monroe J. Otey, Financial Secretary of A. and M. College.....Stillwater, Okla.
Howard F. Pigg, Construction Foreman, General Electric Co.....Brooklyn, N. Y.
Frank L. Rector, (M. D., George Washington University) Bacteriologist, Great Bear Spring Co.....Brooklyn, N. Y.
R. Rex Shively, Bureau of Chemistry.....Washington, D. C.
Charles E. Smeltzer, Student, Rush Medical College.....Chicago, Ill.
Ethel V. Walker, Student, Randolph-Macon Woman's College.....College Park, Lynchburg, Va.
Belle Walker, At Home.....Stillwater, Okla.
Marion M. Woodson, Assistant Principal of High School.....Hobart, Okla.

1903

John J. Brown, Erecting Engineer for Westinghouse Electric and Manufacturing Co.....171 La Salle St., Chicago, Ill.
Horace S. Gulick, Chemist, Iron Works.....E. St. Louis, Ill.
George W. Hoover, Assistant in Bureau of Chemistry.....Washington, D. C.

* Deceased.

R. Merton House, Erecting Engineer for Westinghouse Electrical and Manufacturing Co. ..... Pittsburg, Pa.
Mamie G. Houston, Teacher in City Schools ..... Monmouth, Ore.
Nina B. (Hurst) Suits, ... Santa Monica, Calif.
Mary (Jarrell) Hartman, At Home ..... Sulphur, Okla.
Ransom S. Kenyon, Electrician for New Orleans Ry. and Street Co., New Orleans, La.
Robert H. Kerr, Assistant Chemist, Department of Agriculture ..... Washington, D. C.
William E. Kinder, Professor of Mathematics and English, Connors State School of Agriculture ..... Warner, Okla.
Henry J. Lincoln, Inspector, Motive Power Department, Santa Fe Railway System ..... Wilkinsburg, Pa.
Henry F. McBride, Guanajuato Power & Electric Co. ..... Guanajuato, Mexico
Maud I. Miller, Teacher ..... Douglas, Ariz.
* Charles E. Morrow ..... Stillwater, Okla.
* Deceased.
Jessie E. (Morrow) Watkins, At Home ..... Enid, Okla.
Mary A. Nielson, Teacher in City Schools ..... Perry, Okla.
Stella C. Nelson, Druggist ..... Washington, D. C.
Lila E. (Nelson) Chandler, Pharmacy Student ..... Washington, D. C.
Cyrus W. Nelson, Druggist ..... Washington, D. C.
Esther A. North, At Home ..... Geary, Okla.
Abbott G. Robinson, Assayer ..... Tecopa, Calif.
Bertha M. Ruble, Teacher City Schools ..... Enid, Okla.
Florence K. Walker, Assistant Cashier, Exchange Bank ..... Glencoe, Okla.

1904

Renzo D. Bowers, Lawyer ..... Roswell, N. Mex.
Frederick F. Chandler, Assistant Master Mechanic, Bethlehem Steel Co. ..... South Bethlehem, Penn.
Samuel B. Durham, Professor Animal Husbandry, Agricultural College, ... Los Banos, La Laguna, P. I.
J. Carleton Gilbert, Department of Agriculture ..... Washington, D. C.
Porter N. Guynn, Inspector, Civil Engineering Department, Illinois Steel Co., ... South Chicago, Ill.
Clyde M. Hamblin, General Electric Co. ..... Schenectady, N. Y.
Edward L. Jones, Government Electrician ..... San Jose, Calif.
John W. Kidd, Instructor in Electrical Engineering, Texas A. and M. College, ... College Station, Tex.
Amos E. Lovett, Farmer ..... Hunter, Okla.
Vern Marple, Bank Cashier ..... Sulphur, Okla.
John F. McBride, Guanajuato Power & Electric Co. ..... Guanajuato, Mexico
Bernice Morgan, Teacher in City Schools ..... Stillwater, Okla.
Abigail E. Nelson, Art Student ..... Washington, D. C.
Harry I. Stevens, Jr., Chemist, Starch Works ..... Chicago, Ill.
William A. Tarr, Student, University of Arizona ..... Tucson, Ariz.
Maud E. Thoroughman, Teacher ..... Perkins, Okla.
Joseph W. Thornberry, Buttermaker, Townsend Creamery, ... Astoria, Ore.
Faye B. Walker, At Home ..... Tulsa, Okla.
Alpheus C. Withers, Dentist ..... Arapaho, Okla.
George F. Wikle, General Electric Co. ..... Schenectady, N. Y.

1905

Hermond L. Ball, Westinghouse Electric and Manufacturing Co. ..... Pittsburg, Penn.
Robert I. Bilyeu, County Superintendent ..... Stillwater, Okla.
Frank R. Blue, Operating Engineer, Chicago Edison Co. ..... Chicago, Ill.
Rose E. Broom, Teacher ..... Madison, Nebr.

William L. Burlison, Assistant in Soils and Crops, A. and M. College, Stillwater, Okla.
Roy E. Burnett, Assistant in Bacteriology, Department of Agriculture, Washington, D. C.
Harry Comstock, Chief Electrical Ergineer, Witherbee, Sherman & Co. Mineville, N. Y.
William L. English, Field Agent, Department Co-operative Demonstration Work, U. S. Department of Agriculture Stillwater, Okla.
Andrew C. Hartenbower, Professor of Agriculture Lima, Peru
Alice A. Hastings, Teacher Ralston, Okla.
G. Ernst Hines, Supervising Engineer, Burns & McDonnell Kansas City, Mo.
John C. Johnstone, Teacher Lawton, Okla.
Elmer J. Knauss, Drug Clerk Kansas City, Mo.
John A. Nelson, Lawyer Washington, D. C.
Carrie E. Lewis, Teacher Stillwater, Okla.
Walter S. Rush, General Manager, International Marine Indicator Co. New York, N. Y.
John A. Spaulding, Farmer North Enid, Okla.
Lola M. (Tankersley) McAninch Edmond, Okla.
Raymond C. Wiley, Assistant Station Chemist Manhattan, Kans.
J. Earl Woodworth, Statistical Clerk, State Board of Agriculture Guthrie, Okla.

1906

Mary B. Atkinson, Teacher Stillwater, Okla.
Gertrude M. Braden, Teacher Watseeka, Ill.
Charles W. Brown, Assistant Bacteriologist, Experiment Station, Agricultural College, Mich.
Emma A. Chandler, Professor of Domestic Science and Art, Murray State School of Agriculture Tishomingo, Okla.
Arthur C. Clark, General Electric Co. Schenectady, N. Y.
Dovie V. Eberle, Teacher Ralston, Okla.
Carl E. Howell, Chief Operator's Office, P. L. & P. Co. Los Angeles, Calif.
Theo M. Lowry, Teacher Stillwater, Okla.
Clarence H. McElroy, Merchant Jennings, Okla.
Bertha Miller, At Home Stillwater, Okla.
Fred B. Olentine, Student Rush Medical College Chicago, Ill.
John C. Osborn, Operator, Hudson River Power Co. Amsterdam, N. Y.
Grace E. Semke, Teacher Covington, Okla.
* Stewart G. Smith Stillwater, Okla.
Veda R. Walker, Student Chicago, Ill.
James Wilson, Assistant in Bacteriology, Experiment Station Geneva, N. Y.

1907

Ruth R. Bras, Teacher Stillwater, Okla.
Ross L. Carson, Principal of City Schools Tryon, Okla.
Bertha M. Chester, Teacher Stillwater, Okla.
Elmer E. Dougan, General Electric Co. Pittsfield, Mass.
Maud M. English, At Home Mulhall, Okla.
Avery V. Hancock, General Electric Co. Schenectady, N. Y.
Charles E. Hoke, Assistant in Office of Farm Management Oklahoma City, Okla.
Harry G. Hoke, Westinghouse Electric Co. Wilkinsburg, Pa.
Arthur G. Lantz, Dexter, N. M.
Calvin R. Lantz, Dexter, N. M.
Edwina (Morrison) Berry, At Home Stillwater, Okla.
Bonnie Newcomb, Teacher Post Falls, Idaho
Hattie I. Oschman, Teacher, City Schools Brooklyn, N. Y.

*Deceased.

J. Anderson Ratcliff, Assistant in Agronomy, A. and M. College.....Stillwater, Okla.
Charles T. Reeve, General Electric Co.....Schenectady, N. Y.
Henry W. Reeve, Farmer.....Choctaw, Okla.
Jeanette I. Taylor, Teacher.....Renfrow, Okla.
Pearl L. Wiar, At Home.....Stillwater, Okla.

1908

Rex E. Anderson, Registrar, A. and M. College.....Stillwater, Okla.
Robert O. Baird, Assistant Station Chemist, A. and M. College.....Stillwater, Okla.
Paul Bennett, Farmer.....Marshall, Okla.
Albert L. Boley, Engineer.....Fairview, Okla.
Frank Cole, Assistant.....College Park, Md.
Victor H. Francis, Assistant in A. and M. College Training School, Stillwater, Okla.
Ernest H. Gager, Commonwealth Edison Electric Co.....Chicago, Ill.
Fannie Hamon, Teacher.....Stillwater, Okla.
Frank A. Hays, Farmer.....Judith Gap, Mont.
D. Lynn Holmes, Physical Director and Professor of History, Bethel College, ...Russelville, Ky.
O. Wendell Holmes, State Dairy Inspector.....Guthrie, Okla.
Lenore R. Janeway, Teacher of Domestic Economy, Chickasha High School..... .....Chickasha, Okla.
Clarence R. Letteer, Superintendent of City Schools.....Ramona, Okla.
A. Lester Lovett, Assistant Entomologist, A. and M. College.....Stillwater, Okla.
James G. McCall, Farmer.....Vienna, Ill.
Pliny E. Means, Commonwealth Edison Electric Co.....Chicago, Ill.
Albert I. Moore, Principal of City Schools.....Garvin, Okla.
Raymond H. Moore, City Circulation Manager, Oklahoma City Times..... .....Oklahoma, Okla
Oliver T. Peck, Book Business.....Clinton, Okla.
Ida M. Stover, Teacher, City Schools.....Bartlesville, Okla.
Clarence A. Wood, City Engineer.....Stillwater, Okla.
Edd Znamenacek, Commonwealth Edison Electric Co.....Chicago, Ill.

ROLL OF STUDENTS

Seniors

Bentley, Maurice R.	*Engineering*	Wichita Falls, Texas
Blue, True C.	*Engineering*	Lebo, Kansas
Boutin, Harry C.	*Engineering*	Coyle
Bradwell, Olive B.	*Science and Literature*	Stillwater
Bullen, Clarence K.	*Engineering*	Stillwater
Burke, Markus P.	*Engineering*	Stillwater
Caton, Orpha M.	*Science and Literature*	Stillwater
Cloukey, Homer U.	*General Science*	Enid
Crawford, Charles W.	*General Science*	Apache
Gaasch, Glenn M.	*Engineering*	Bentonville, Arkansas
Gallagher, Edward C.	*Engineering*	Perth, Kansas
Gollehon, M. Floyd	*Engineering*	Stillwater
Gougler, Frank A.	*Agricultural*	Stillwater
Hagar, Hyral S.	*Science and Literature*	Stillwater
Hancock, Joy B.	*Science and Literature*	Sophia
Hemphill, Ora L.	*Engineering*	Stillwater
Johnson, Norma N.	*Science and Literature*	Stillwater
Kirkpatrick, I. Cecil	*Science and Literature*	Stillwater
Lahman, Wilbur L.	*General Science*	Stillwater
Lindsey, Ray V.	*Engineering*	Kingfisher
Mitchell, Lloyd C.	*General Science*	Oklahoma City
McMullin, Samuel L.	*Engineering*	Manchester
McPheeters, William H.	*Engineering*	Stillwater
Needham, Ollie	*Engineering*	Oklahoma City
Springer, Mamie	*Science and Literature*	Stillwater
Stebbins, Albert A.	*Engineering*	Enid
Stebbins, Robert R.	*Science and Literature*	Enid
Stewart, Forest L.	*Engineering*	Stillwater
Stover, Nannie	*Science and Literature*	Stillwater
Tate, J. Arnold	*Engineering*	Stillwater
Treeman, Herbert L.	*Engineering*	Perry
Wise, Mabelle L.	*Science and Literature*	Stillwater

Juniors

Allen, H. Stanley	*Engineering*	Uncas
Baade, Herman J.	*General Science*	McLoud
Camp, Wilmer E.	*Engineering*	Haskell, Texas
Carter, Charlton W.	*Engineering*	Glencoe
Clausen, Roy E.	*Agricultural*	Stillwater
Faulds, Norval M.	*Engineering*	Enid
Fisher, J. Guy	*Engineering*	Garber
Funda, Fred P.	*Engineering*	Devils Lake, North Dak.
Gammie, Robert J.	*Engineering*	Stillwater
Hiet, Melvin E.	*Engineering*	Stillwater
Hildebrand, Lee E.	*Engineering*	Stroud
Hubler, Willis A.	*General Science*	Newkirk
Jones, C. Shelley	*Engineering*	Sayre
Kenyon, Rodney E.	*Engineering*	Kaw City

King, Beverly D.	*Engineering*	Wharton, Texas
Kirkpatrick, V. Victoria	*General Science*	Stillwater
Kooken, E. Ralph	*Agricultural*	Kingfisher
Lawellin, Robert C.	*Engineering*	Stillwater
Lawellin, Samuel J.	*General Science*	Stillwater
Lewis, Myrtle I.	*Science and Literature*	Stillwater
McBride, Iva A.	*Science and Literature*	Stillwater
Moote, Truman P.	*Engineering*	Stillwater
Neuman, Leo M.	*Engineering*	Stillwater
Newby, J. Carl	*Agricultural*	Englewood, Kansas
Oursler, Archie C.	*Agricultural*	Stillwater
Pochel, Roy A.	*Engineering*	Stillwater
Ritter, Lawellyn B.	*General Science*	Hobart
Rogers, Almira B.	*Science and Literature*	Stillwater
Ross, James K.	*Engineering*	Madill
Selement, Frank J.	*Engineering*	Yukon
Smith, C. Ray	*General Science*	Stillwater
Spaulding, Harry B.	*General Science*	Ralston
Speidel, John M.	*Agricultural*	Edmond
Spohn, Ralph E.	*Engineering*	Glencoe
Straub, Otto T.	*Agricultural*	Amarillo, Texas
Tibbetts, Frank J.	*Engineering*	Rincon, New Mexico
Vezey, E. Earl	*Engineering*	Orlando
Walters, Maggie P.	*Science and Literature*	Stillwater
Walters, Minnie D.	*Science and Literature*	Stillwater
Watrous, Robert O.	*Engineering*	Stillwater
Wershing, Benjamin R.	*Engineering*	Blackwell
Will, Doris G.	*Engineering*	Glencoe
Williams, Guy P.	*Engineering*	Mehan
Wilson, Harry E.	*Engineering*	Winfield, Kansas
Woodworth, Clyde M.	*Agricultural*	Perry
Worthington, Wayne H.	*Engineering*	Stillwater

Sophomores

Aikins, Evelyn M.	*Science and Literature*	Stillwater
Aikins, John E.	*Engineering*	Stillwater
Albright, J. Warden	*Engineering*	Stillwater
Austin, W. Harry	*Engineering*	Kremlin
Beauchamp, Wade	*Engineering*	Anadarko
Beckman, Fred G.	*Engineering*	Okmulgee
Blackwell, Carl P.	*General Science*	Floydada, Texas
Blue, Fred	*Agricultural*	Ingersoll
Bonnett, Howard E.	*General Science*	McLoud
Braden, John B.	*Engineering*	Watseka, Illinois
Brewer, Emerich H.	*Engineering*	El Reno
Buckles, Cale O.	*Science and Literature*	Peru, Kansas
Burford, Ernest C.	*Engineering*	Stroud
Burke, William J.	*Engineering*	Stillwater
Bush, J. Morgan	*Engineering*	Eddy
Casali, Louise G.	*Science and Literature*	Guthrie
Corwin, Walter L.	*Engineering*	Fairview
Darst, Thomas B.	*Agriculture*	Richmond, Texas
Davis, G. Harley	*Engineering*	Stillwater
Davis, Richard N.	*Agriculture*	Athens, Alabama
Dorman, William S.	*Engineering*	Pond Creek
Flynn, William J.	*Engineering*	Granite
Frier, Clarence H.	*Engineering*	Sulphur

Galyon, Edgar O.	*Engineering*	Lawton
Gardner, Frank	*Engineering*	Fairfax
Gray, William F.	*Agriculture*	May
Hamilton, Frank C.	*General Science*	Mulhall
Hamon, Chester A.	*Engineering*	Stillwater
Hamon, Robert J.	*General Science*	Stillwater
Hanna, Paul D.	*Agriculture*	Galveston, Texas
Harvey, Carl F.	*Engineering*	Stillwater
Hoke, George A.	*Science and Literature*	Quay
Hall, Roy V.	*Engineering*	Buckhannon, West Va.
Hopps, Carl W.	*Engineering*	Lawton
Jesse, Walter B.	*Agricultural*	Supply
Kennedy, Ivan L.	*Engineering*	Perry
Kester, Milton R.	*Engineering*	Enid
Kirkpatrick, Katie C.	*General Science*	Stillwater
Larson, John E.	*Agricultural*	Fairfield, Iowa
Lee, Glenn	*Science and Literature*	Marlow
Leicht, Harry S.	*Engineering*	Coldwater
Longfellow, Benjamin A.	*Agricultural*	Oklahoma City
Mason, Howard G.	*Engineering*	Lawton
Mayall, J. Samuel	*Engineering*	Edmond
Moskedal, Olga	*Science and Literature*	Guthrie
McArthur, Clifford L.	*General Science*	Stillwater
McBride, John D.	*General Science*	Stillwater
McIntyre, Jesse C.	*Engineering*	Stillwater
McKay, M. Bert	*General Science*	Lawton
McPheeters, Margaret I.	*Science and Literature*	Stillwater
Nagle, Frank A.	*Engineering*	Muskogee
Oursler, Clark M.	*Science and Literature*	Stillwater
Overman, Carl M.	*Engineering*	Dover
Potter, William T.	*Agricultural*	Stillwater
Red, Roy D.	*Science and Literature*	Mound
Reed, Fred A.	*Engineering*	Oklahoma City
Riley, Mattie I.	*General Science*	Stillwater
Schnurr, Cornelius	*Engineering*	Orlando
Shiflett, Roger C.	*Agricultural*	Duncan
Smith, Joseph G., Jr.	*Agricultural*	Dallas, Texas
Stewart, Annabel	*Science and Literature*	Stillwater
Trueax, Clyde P.	*Engineering*	Pond Creek
Vail, Nathan D.	*Agricultural*	Stillwater
Walton, Noel H.	*Engineering*	Guthrie
Watson, Dallas H.	*Engineering*	Chandler
Webb, Arthur E.	*Agricultural*	Mountain Park
Wenner, Edward F.	*Engineering*	Perry
Wikle, Hugh M.	*Engineering*	Orlando
Wilde, Charles A.	*General Science*	Cleveland
Wildman, Arthur H.	*Engineering*	Geary
Wilkison, Cuba G.	*General Science*	Coalgate
Wilson, Clay E.	*Science and Literature*	Stillwater
Winings, Earl V.	*Engineering*	Oklahoma City
Winters,, N. Elmer	*Agricultural*	Cashion

Freshmen

Allen, Richard N.	*Engineering*	Garber
Ames, Clora E.	*Science and Literature*	Big Cabin
Bahr, William H.	*Agricultural*	Driftwood
Baker, Forest P.	*Science and Literature*	Rosboro

Bartlett, Edward E.	*General Science*	Stillwater
Bartlett, Ellsworth C.	*Agricultural*	Stillwater
Bieghler, Lottie S.	*Science and Literature*	Merrick
Bloom, Charles H.	*Engineering*	Jennings
Bowers, Charles R.	*General Science*	Stillwater
Braswell, Stanley E.	*Engineering*	Stillwater
Bruington, Lloyd	*Engineering*	Pawnee
Bryant, Earl	*Engineering*	Tonkawa
Buchanan, Harvey T.	*Agricultural*	Whitesboro, Texas
Buchanan, William A.	*Agricultural*	Stillwater
Buffington, E. Bertha	*Science and Literature*	Glencoe
Bullen, Bernard C.	*General Science*	Stillwater
Chivington, Anna L.	*Science and Literature*	Stillwater
Clark, Charles L.	*General Science*	Stillwater
Clausen, Beryl O.	*Engineering*	Stillwater
Clausen, Curtis P.	*Agricultural*	Stillwater
Claypool, Earl R.	*Engineering*	Fountain
Coburn, Carrol	*Engineering*	Okarche
Condreay, Emil E.	*Engineering*	Chester
Conley, Victor H.	*Engineering*	Pawnee
Connell, William B.	*Engineering*	Stillwater
Cook, Harold P.	*Engineering*	Guthrie
Correll, Vincent I.	*General Science*	Stillwater
Cory, John M.	*Engineering*	Mulhall
Cotterman, Iva J.	*Science and Literature*	Stillwater
Cox, Mary E.	*Science and Literature*	Stillwater
Crocker, Fred L.	*General Science*	Stillwater
Crutsinger, Paul	*Agricultural*	Ft. Gibson
Dannenberg, H. W. Grady	*Engineering*	Chelsea
Darlow, Harry	*Engineering*	Stillwater
Dienl, Clarence J.	*Engineering*	Mulhall
Dolde, William E.	*Engineering*	Guthrie
Dowell, Elmer F.	*General Science*	Perry
Duck, Thomas W.	*Engineering*	Keystone
Dumas, Ezra	*General Science*	Perkins
Evans, A. Ray	*Agricultural*	Stillwater
Evans, Fern I.	*General Science*	Collinsville
Florer, C. A.	*Engineering*	Kendrick
Freiday, Almira P.	*Science and Literature*	Stillwater
Frenzel, Harry H.	*Engineering*	Sentinel
Gale, Merl Evelyn	*Science and Literature*	Boone, Iowa
Gilstrap, Leo J.	*Agricultural*	Cromwell, Kentucky
Gollehon, L. Walter	*Agricultural*	Stillwater
Gowin, Walter W.	*Agricultural*	Douglas
Green, James	*Agricultural*	Hereford, Texas
Gregory, Howard W.	*Agricultural*	Apache
Hall, Nona E.	*General Science*	Stillwater
Harcourt, Roy A.	*General Science*	Davidson
Harnden, Edward E.	*General Science*	Stillwater
Harrison, Robert L.	*Engineering*	Stillwater
Herrick, Harlan C.	*Engineering*	Enid
Hill, Vera M.	*Science and Literature*	Stillwater
Hoke, Mac	*Agricultural*	Quay
Hoyt, Hugh M.	*Engineering*	Cashion
Irvin, Clara M.	*Science and Literature*	Stillwater
James, Collum P.	*Agricultural*	Stillwater
Jeffords, Sherman L.	*Agricultural*	Elgin
Johnson, Zella	*Science and Literature*	Stillwater
Jones, Glennie	*General Science*	Stillwater

Jones, Fred B.	*Agricultural*	Madill
Kidd, Cara W.	*Engineering*	Stillwater
Kidd, C. Carl	*Agricultural*	Stillwater
Kilpatrick, Earl	*Agricultural*	Hunter
Kilpatrick, Leona M.	*Science and Literature*	Hunter
Kimball, Harry H.	*Engineering*	Stillwater
Knoblock, Fred L.	*Engineering*	Stillwater
Lewis, Gailon	*General Science*	Apache
Lowman, Edward F.	*General Science*	White Rock
Lynch, Harold W.	*Engineering*	Hennessey
Lytle, Albert E.	*Agricultural*	Oklahoma City
Masemore, Lloyd M.	*Agricultural*	Kremlin
Merydith, Clarence S.	*Agricultural*	Stillwater
Miller, Roy F.	*Agricultural*	Stillwater
Milner, George R.	*Engineering*	Asher
Mott, Franklin J.	*Agricultural*	Muskogee
Mott, Marshall L., Jr.	*Agricultural*	Muskogee
McNeely, James S.	*General Science*	Tiaban, New Mexico
McPheeters, Archie A.	*Engineering*	Stillwater
McPheeters, Ralph T.	*Normal*	Stillwater
Neuman, Iva F.	*General Science*	Stillwater
Olentine, Robert J.	*General Science*	Muskogee
Oschman, Maude E.	*Science and Literature*	Stillwater
Oursler, Elizabeth M.	*Science and Literature*	Stillwater
Owen, Frank S.	*Engineering*	Bedford, Indiana
Painter, H. Ray	*General Science*	Stillwater
Patrick, John C.	*Engineering*	Dover
Payne, Loyal T.	*Agricultural*	Shawnee
Peck, Clarence P.	*Agricultural*	Kingfisher
Peck, William A.	*Engineering*	Oklahoma City
Percy, Ralph A.	*Agricultural*	Thomas
Perrine, George I.	*General Science*	Fairfax
Potter, Frank A.	*Science and Literature*	Stillwater
Pribbenow, Ferdinand A.	*Science and Literature*	Tyron
Reeve, Maud	*Science and Literature*	Choctaw
Rudd, E. Lynn	*Engineering*	Tulsa
Santee, Leonard A.	*Engineering*	Goltry
Shiflett, Hulbert D.	*Agricultural*	Duncan
Shiflett, Riley F.	*Agricultural*	Duncan
Shroyer, S. Earl	*Agricultural*	Lucien
Siler, Claude C.	*Agricultural*	Yukon
Smith, John Allen H.	*Engineering*	Dallas, Texas
Smith, Marion C.	*Engineering*	Tulsa
Snyder, Beryl	*General Science*	Hayward
Sollers, Williard H.	*Engineering*	Grenola Kansas
Spurrier, Odith K.	*Engineering*	Guthrie
Stark, Clyde B.	*Engineering*	Tyron
Sutton, Leo S.	*Engineering*	Stillwater
Swope, Harold M.	*Engineering*	Stillwater
Talbot, Alfred E.	*Agricultural*	Stillwater
Talmage, Imogene	*Science and Literature*	Yukon
Thornton, Jesse	*Agricultural*	Wauhillan
Tillotson, Albert K.	*Science and Literature*	Stillwater
Todd, Edmund J.	*Engineering*	Jennings
Tongue, George F.	*Engineering*	Dallas, Texas
Trent, Dover	*Science and Literature*	Stigler
Vail, John L.	*Engineering*	Stillwater
Vandervoort, Levi A.	*Engineering*	Bison
Weiss, Stanton E.	*Engineering*	Oklahoma City

White, Harry H.....*Engineering*.....Oklahoma City
Whiteside, Arthur E.....*General Science*.....Olney
Whitney, Ethel M.....*Science and Literature*.....Adair
Wiggs, Roy L.....*Agricultural*.....Madill
Williams, E. DeWitt.....*Agricultural*.....Apache
Williams, Leora C.....*Science and Literature*.....Stillwater
Wilson, Carl F.....*Engineering*.....Oklahoma City
Wright, Louise N.....*Science and Literature*.....Stillwater
Wright, Nathan W.....*Science and Literature*.....Stillwater

Sub-Freshmen

Albert, Harold, Stillwater
Allen, Floyd A., Stillwater
Allen, John L., Garber
Anderson, Edward R., Centralia

Anderson, Florence P., Yale
Andrews, Leonard R., Stillwater
Atherton, Jesse W., Stillwater
Atherton, Ray, Stillwater

Barker, Ina E., Stillwater
Barnes, May, Stillwater
Barnes, Sarah M., Stillwater
Bieghler, Nora M., Merriek
Blackwell, Floyd W., Stillwater
Boatright, Daniel, Featherstone
Bowers, Anna, Stillwater

Bradley, William C., Paden
Broadell, Arthur C., Keystone
Brown, Oliver C., Natura
Burke, Catherine J., Perry
Burke, Elizabeth A., Stillwater
Burnham, Zoe, Stillwater

Chivington, Maybelle R., Stillwater
Clark, James A., Stillwater
Cobb, Arthur L., Eddy
Conner, J. Russell, Stillwater

Cook, Ralph B., Frederick
Correll, Ray H., Stillwater
Cox, Floyd, Stillwater
Cripe, Florence, Stillwater

DeCamp, Della E., Stillwater
DeCamp, Verna A., Stillwater
Deming, Orange H., Snyder
Denny, Charles, Stillwater
Diggs, Luella, Stillwater

Donart, Ruth, Stillwater
Dorman, Vernon, Pond Creek
Dougherty, Russell A., Hennessey
Dovell, Gordon J., Guthrie
Dungan, Ethel, Perkins

Emley, Ivan N., Meeker
Epperson, Jess H., Apache

Everest, Philip M., Oklahoma City
Ewton, Amos R., Tecumseh

Failing, Harry, Tulsa
Farquharson, Maurice R., Guthrie
Fenske, August C., Lime Springs, Ia
Fisher, Ruth T., Garber
Florer, Lawrence A., Kendrick

Fix, Fred I., Stillwater
Ford, John B., Stillwater
Ford, William W., Stillwater
Frazee, Raymond L., Lenora

Gammie, Thomas G., Stillwater
Ginter, Roll, Elmwood
Gipe, Romney, Perry
Gipson, LeRoy, Hasting
Goins, John M., Keystone

Gover, Ben, Pawnee
Gravelle, Bertie E., Olustee
Greenwood, Bertie I., Mannford
Grove, Glenn G., Meeker, Colo.
Gumaer, Ira W., Kendrick

Halbert, Roscoe R., Ralston
Hamilton, Fern B., Stillwater
Hannah, Ernest E., Prague
Harvey, John W., Renfrow
Hedger, Howard R., Hooker

Hennigh, Fred R., Stillwater
Higgins, Artis, Stillwater
Horn, Antoinette, Perry
Hunnicutt, Ray T., Perkins
Hunt, Esther E., Stillwater

Jacob, August W., Stillwater
Jacobs, Ethelyn, Avery

Janes, Charles M., Meno
Johnson, James O. C., Stillwater

James, Alice T., Stillwater
James, R. Earl, Woodward

Knowles, Leah M., Stillwater

Larkey, Charles, Waukomis

Macy, Austin, Hennessey
Melton, Wendell A., Goltry
Miller, Stella F., Stillwater
Moore, Ira E., Hayward
Miller, Warden, Elmwood
Miller, Mrs. Dollie, Elmwood
Miller, Joseph J., Lawton
Manwell, Nola, Jones
Moore, Thomas, Keota

Neerman, Claude F., Stillwater
Nelson, Lizzie, Morrison

Orr, Robert M., Mountain Park

Paramore, Harry R., Comanche
Pearson, Thirza M., Yale

Ratts, Junius W., Oklahoma City
Reed, Florence B., Stillwater
Rhoads, Tilford W., Manitou
Rice, Roy B., Apache
Ritchey, Pearl O., Stillwater
Robison, James W., Stillwater

Sater, Joseph E., Stillwater
Scudder, Henry, Chelseo
Sieglinger, John, Lone Wolf
Smith, E. Clyde, Lockridge
Smith, Howard H., Apache
Smith, John B., Stillwater
Smith, Sam P. C., Dallas, Texas

Talmage, Cyde R., Yukon
Taylor, Charlie, Bliss
Taylor, Forest E., Stillwater
Taylor, Nellie, Stillwater

VanArsdell, Ruth A., Yates

Walters, Julia A., Stillwater
Ward, Orvel A., Blackwell
Warren, Pearl G., Stillwater
Watrous, Minnie E., Stillwater
Watson, Florence, Stillwater
Watson, Wayne E., Stillwater
Weaver, G. Earl, Stillwater
Weber, Albert G., Calumet
Wells, Edmund E., Kingfisher
Wertz, Fayette, Broken Arrow

Jones, Daisy L., Stillwater
Jones, Donna E., Stillwater

Loop, Fred L., Manchester

Mohr, Burton L., Mustang
Murphy, Herbert D., Marshall
Myers, Vernia L., Stillwater
McBride, Nellie L., Stillwater
McClintick, Hiram B., Ralston
McCollough, Elmer F., Yale
McIlvain, Charles L., Ponder, Texas
McMurray, Thomas A., Waukomis

Newton, Edna O., Stillwater
Nicholson, Floyd D., Coweta

Pierce, Ida L., Stillwater
Pitzer, Roland G., Oklahoma City

Rogers, M. Eulala, Stillwater
Ruffner, Ralph, Depew
Russell, Carl, Warner
Russell, Christy, Warner
Russell, Connie, Warner

Smoot, L. Ellen, Stillwater
Stevens, Clinton O., Stillwater
Stevens, Roy E., Stillwater
Stewart, V. Grace, Coyle
Stewart, Zarembra, Lake City, Kansas
StClair, Robert C., Terlton

Thompson, William G., Stillwater
Thomas, William I., Kellyville
Tourtelotte, Evert, Stillwater

White, Alexander N., Chicato, Texas
Wikoff, Marguerite, Stillwater
Williams, Carl J., Stillwater
Williams, Elbridge F., Marlow
Williams, Roger L., Ramsdell, Texas
Williamson, Carrie, Stillwater
Winfrey, Anna M., Glencoe
Wood, E. Lee, Stillwater
Wortman, Raymond B., Okemah
Wright, Harley M., Cashion

Special Students

Barker, Emma K., Depew
Baxter, Fay L., Guthrie

Bishop, Corrinne E., Jennings
Bowdlear, Sybil, Ripley

Bishop, Bertha I., Jennings
Burke, Clara C., Stillwater

Carson, George N., Red Rock
Currey, Cora N., Stillwater

Dent, Nell B., Stillwater
Dunn, Lonnie L., Weatherford

Freiday, Don S., Stillwater
Fulwider, Estella B., Perkins
Fresh, Lula E., Perkins

Gollehon, Letha M., Stillwater
Greiner, Rose A., Stillwater

Hamilton, J. Homer, Ash Grove, Mo.
Houston, Hazel K., Guthrie
Harcourt, June A., Davidson
Hays, George A., Weimar, Texas
Hardy, Nettie, Ardmore
Hufnagel, Carl, Okarche
Hill, Edith B., Stillwater
Hughes, Josephine E., Stillwater

Ives, Fred H., Porter

Jackson, Thomas L., Okmulgee

Kerr, Elinor, Goltry
Kerr, Thomas, Goltry

Lahman, Ruth A., Stillwater

Middleton, L. Maud, Knoxville, Tenn.
McTaggart, Guy E., Stillwater
Mittendorf, Helen M., Calumet

Oschman, Nina M., Stillwater

Pearson, Mary A., Stillwater

Ratcliff, J. A., Tryon
Rice, Roy B., Apache
Remington, Mrs. Gertrude, Cushing
Roberson, Nona E., Stillwater
Reynolds, Oris H., Stratford

Schiewe, Emil, Morrison
Snyder, Bert R., Hayward
Shoop, Bess M., Perry
Stevens, Margaret, Norborne, Mo.
Smith, J. Stayton, Mulhall

Taylor, M. Austella, Stillwater
Tillotson, Bonnie R., Stillwater

Unger, E. J., Stillwater
Unger, Mrs. Nellie M., Stillwater

Walker, Helen H., Glencoe
Woolard, Ira I., Stillwater
Wood, Lillian, Cherokee

Business Students

Amspacher, James, Apache
Anderson, Ellen, Fairmont
Andrews, Albert S., Lone Wolf
Anderson, F. Debar, Fairmont

Bain, Carl E., Uncas
Blackburn, Walter W., Grimes
Balduff, W. F., Bliss
Blackwell, Treva R., Shawnee
Barker, Joseph K., Depew
Botts, Ethel E., Stillwater
Barker, Mattie E., Depew
Brock, George T., Stillwater
Bawlin, John, Ulm, Ark.
Brooks, Lola V., Stillwater
Beaty, Jessie A., Stillwater
Brown, Carl K., Carney
Belcher, Foy C., Stillwater
Brown, Maurice Y., Carney

Carter, Raymond S., Galveston, Texas
Cole, Lloyd, Stillwater
Cauley, Bert E., Stillwater
Conger, Luella, Painter
Chaney, Clarence, Holton, Kansas
Cox, Manford A., Tryon
Colby, E. Ralph, Okarche
Cripe, Mabel, Stillwater
Collins, Louis, Stillwater

Daws, Ona E., Guthrie
Diggs, Florence W., Stillwater
Dotter, Della E., Stillwater
Dotter, Dora, Stillwater
Duncan, Ralph P., Otoe

Estes, Van E., Headrick

Fleming, Jennie, Crescent
Foster, Worthy P., Kingfisher
Fuss, Adie M., Maramec
Fuss, Gertrude E., Maramec

Hartert, Carl J., Stillwater
Hartert, Idelle E., Stillwater
Hartenbower, John, Stillwater
Haughey, Minnie S., Columbia
Hawkins, Wilbur W., Arcola, Ill.
Hibarger, Leslie R., Jefferson
Hines, Charles W., Stillwater

Kinnick, Van, Perry
Knox, George D., Headrick

Larimer Edith, Stillwater
Lizar, Maey, Pawnee

Matson, Myrtle, Stillwater
Messall, Arthur B., Enid
Miller, Carl, Stillwater
Mitchell, E. Winona, Stillwater
Mitchell, Lula M., Stillwater
Mitchell, Nellie, Marshall
Morrison, Albert M., Stillwater
Mullins, Jessee R., Stillwater
McLean, Mary, Stillwater
McMahon, Andrew, Apache

Northup, Evelyn L., Stillwater
Nutter, Florence, Stillwater

Patterson, Lowe L., Perry
Peery, Ruth, Stillwater
Pound, Obed O., Stillwater

Ray, Mrs. B. A., Stillwater
Riefkohl, Herman C., Grimes
Robertson, Russel R., Stillwater

Selders, Joseph G., Lawton
Skoedopole, William, Oseeola
Sellers, Clark W., Carmen
Spurgeon, Roy, Avery
Straub, Sylvia E., Stillwater
Swisher, Dennis W., Shawnee

Thompson, Paul K., Stillwater
Tourtelotte, Lulu M., Stillwater
Tudor, J. Lola, Stillwater

VanAntwerp, George E., Tecumseh
Van Arsdel, Hattie, Yates

Walker, Ira, Sac and Fox Agency
Weir, Gala P., Stillwater
Wertz, Benjamin H., Broken Arrow
Wier, Samuel O., Kiel
Witteman, Ada P., Mulhall
Woodrow, Paul A., Lone Wolf
Worley, C. Della, Stillwater
Young, Nellie M., Bristow

Students in the School of Agriculture and Domestic Science

Anderson, Emma, Fairmont
Anderson, Oris M., Stillwater

Bain, Landy L., Grimes
Baker, William H., Kiowa, Kans.
Bareus, Edward L., Stroud
Beans, Wade, Mountain Park
Bonar, H. Turley, Prague
Brian, Carl, Newkirk

Caha, Earnest, Prague
Chambers, Myrtle, Yale
Christmas, Arthur A., Pond Creek
Christmas, Loyd, Pond Creek
Claypool, Ruth, Fountain
Comstock, Lola A., Deer Creek
Cool, Raleigh, Carmen
Corley, Powell F., Howe
Crawford, Pearl W., Ripley

Dale, Malcomb, Lenora
Deister, Philip, Kanawa
Dickey, Robert H., Dill

Emmons, Dallas E., Vinita
Ford, Frank W., MeLoud
Garrard, Robert M., Maysville
Garrard, T. Paul, Maysville
Green, Joe H., Hereford, Texas
Harris, Carl, Forman, Arkansas
Harter, Clifford W., Kremlin
Hamlin, Thomas A., Dill
Haun, Amy L., Stillwater
Haun, Jaeob, Stillwater
Heisler, Philip, Chiekasha
Henderson, Fred, Fairview
Johnson, Ray, Walter
Kelsey, Burtus, Waynoka
King, Luther M., Hunnewell, Kansas
Langford, Budd, Purdy
Latimer, Louise E., Foss
Madsen, Christian R., Guthrie
Markart, Robert, Cement
Miler, Roy G., Oklahoma City
Perkins, Isaae, Cairo, Georgia
Pletseher, Rudolph E., Trenton
Powell, Jess, Calumet
Powell, Teddy, Calumet
Robertson, Paul A., Oklahoma
Sayre, Eugene W., Morrison
Seeley, Herbert N., Caehe
Shinn, Robert E., Gleneoe
Sorenson, Alma E., Guthrie
Tenny, Arthur B., Okarehe
Terry, Osear C., Clarksville, Texas
Venable, Boyd, Yale
Ward, Henry, Atoka
Wisegarver, George O., Shawnee
Yates, Mabel C., Coyle
Younger, Lloyd D., Stillwater

Estee, Olive L., Webb
Freeman, Roy E., Wellston
Gross, Luther W., Braman
Guernsey, Clarenee O., Oklahoma City
Hess, Peter, Enid
Hewitt, Paul M., Coyle
Hix, Harold C., Olustee
Holman, Edward, Garvin
Holman, Guy, Garvin
Hornbeek, Charles A., Mineo
Hornbeek, Richard K., Mineo
Kirkpatriek, C. H., Speermore
Kramp, Edward, Okeene
Lindsay, Louis W., Isabella
Lindsey, Pete L., Garvin
Morris, William R., El Reno
Mowery, Ada G., Glencoe
Moyer, William, Deer Creek
Pribbenow, John G., Tryon
Pribble, Arthur J., Meno
Pribble, Delbert B., Meno
Pribble, Emerson W., Meno
Stewart, Chesney H., Coyle
Stewart, Metta, Coyle
Suthard, George W., Stillwater
Thomas, Woodie H., Ahpeatone
Tubbs, George C., Hastings
Wyatt, Joe A., Wanette
Yowell, Guy, Cashion
Yowell, Henry C., Cashion

Students in Summer Normal, 1908

Albright, J. Warden, Stillwater
Alles, Veola, Cushing
Barker, Ina, Stillwater
Barney, May, Stillwater
Bassler, Emma A., Stillwater
Benediet, Gertrude, Mulhall
Bilyeu, John, Stillwater
Benson, Berniee, Tryon
Bowers, Anna, Stillwater
Anderson, Pearl, Yale
Andrews, Sadie, Stillwater
Braymer, Gertrude, Tulsa
Bridwell, Lela, Perkins
Bridwell, Q. V., Perkins
Brooks, Lola, Stillwater
Brown, J. H., Prague
Buekles, C. O., Perry, Kansas
Buelow, Sanelia, Stillwater

Bradwell, Olive, Stillwater
Branum, Linnie, Crescent
Bras, Ruth R., Stillwater
Braswell, P. H., Stillwater
Braswell, Stanley, Stillwater

Chandler, Emma, Stillwater
Chrystal, Eliza, Goodnight
Chrystal, I., Goodnight
Collins, Blanche, Stillwater
Collins, Louis, Stillwater
Collins, Olive, Stillwater
Collins, Phoebe, Stillwater
Connell, William B., Stillwater

Darlow, Margaret, Stillwater
Davis, Jessie M., Ripley
Davis, Mabel, Ripley
Davis, Mrs. L. J., Ripley
Davis, Olive, Perkins
Denny, William, Stillwater
Dent, Nell B., Stillwater
Derrick, W. E., Perkins

Eagan, William L., Hitchcock
Emmons, Jessie, Stillwater
English, Maude, Stillwater
Ericson, Lilla E., Stillwater

Galbraith, E. L., Perkins
Goodman, Latolia, Choctaw
Groenendyke, F. A., Miama

Hamon, B. F., Stillwater
Hamon, Fannie E., Stillwater
Harnden, F. D., Stillwater
Harrison, Luella, Stillwater
Hartert, Idelle, Stillwater
Hayes, Sayde, Stillwater
Hemphill, Blanche, Perkins
Henderson, Retta, Yale
Hewitt, John, Coyle

Ingolsbe, F. S., Perkins
Irvin, Clara, Stillwater
Jacob, Lewis, Stillwater
Janeway, Lenore, Stillwater
Janeway, Lucile, Stillwater
Johnson, Norma, Stillwater
Johnson, Zella, Stillwater

Kimbrough, Russie, Jordan
Kimbrough, Sue, Jordan
King, Mrs. L. A., Glencoe

Letteer, C. R., Stillwater
Lewis, Carrie E., Stillwater
Light, Etolia, Pauls Valley

Mann, Hariette, Perkins
Merydith, Clarence, Stillwater

Baffington, Bertha, Glencoe
Burnham, Zoe, Stillwater
Burwell, Ernest, Glencoe
Butler, Alta, Cushing

Cotterman, Iva, Stillwater
Cox, Charles, Perkins
Cox, Etta, Goodnight
Cox, Mary, Stillwater
Cross, Mabel, Glencoe
Cummins, Laura, Stillwater
Cunningham, Mildred, Stillwater
Currey, Cora N., Stillwater

Dodd, Alice M., Stillwater
Donart, Gladys, Stillwater
Donart, Ruth, Stillwater
Drake, Treharn, Stillwater
Durgan, Ethyl, Perkins
Durham, May S., Stillwater
Durham, Pearl, Stillwater

Evans, Ray, Stillwater
Ferguson, Pearl, Yale
Freiday, Almira P, Stillwater
French, Grace, Stillwater

Groenendyke, Mrs. F. A., Miama
Gyse, Bonney, Perry

Hewitt, Paul M., Coyle
Hill, Bess, Pauls Valley
Hill, Vera M., Stillwater
Hoskinson, Anna, Stillwater
Hoyle, Jeanette, Perkins
Huff, Cora G., Stillwater
Hughes, Nell M., Stillwater
Hunt, Era M., Stillwater

Johnston, Ethel, Stillwater
Jones, Daisy L., Stillwater
Jones, Donna, Stillwater
Jones, Eva, Stillwater
Jones, Glennie, Stillwater
Jones, Jeanne, Stillwater

Kirk, Reno M., Stillwater
Kirkpatrick, I. Cecil, Stillwater
Knight, Myrtle A., Stillwater

Light, Orvilla, Pauls Valley
Lowry, Theo M., Stillwater

McClanahan, Lula, Glencoe
McLain, Hattie, Perkins

Montgomery, Mamie, Stillwater
Morris, Chas. G., Kiel
Morrison, Nellie, Goodnight
Moser, Cora, Yale
Mowery, Ella, Glencoe

Nance, G. W., Cheyenne
Norrie, Kate, Stillwater

Palmer, E. Grace, Stillwater
Patterson, Laura, Stillwater
Payne, Ferne, Stillwater
Payne, Halena, Stillwater
Perry, Ruby, Pauls Valley
Poole, Mrs. Emma, Perkins

Rafferty, Sara, Cushing
Ramsie, Lockie, Morrison
Reed, F. P., Stillwater
Reed, Mrs. F. P., Stillwater
Reeve, Maud J., Choctaw
Rehm, Aleen, Cushing
Remington, Mrs. Gertrude, Cushing

Schooler, Emma, Glencoe
Shaffer, Alta, Stillwater
Slaybough, Cathrine, Stillwater
Smith, Esther, Glencoe
Smith, Esther B., Kiefer
Smith, Horace, Mulhall
Smith, Miles M., Chautauqua, Kansas
Snyder, Georgia, Stillwater

Tankersley, Kate, Stillwater
Tankersley, Percy, Stillwater
Teitz, Ella, Mehan
Tift, Mattie B., Stillwater

Unger, E. J., Stillwater

Venable, Zella, Yale

Wagner, Lizzie, Davidson
Warren, Pearl, Stillwater
Watrous, Josephine, Stillwater
Watrous, Minnie, Stillwater
Watson, Floe, Stillwater
West, Maude, Stillwater
West, Ola B., Stillwater

Youngblood, Kathrine, Pauls Valley

McLaughlin, Amanda, Cushing
McLaughlin, Florence, Bartlesville
McPheeters, Nellie, Stillwater
McTaggart, Winfred, Stillwater

Norrie, Mabel, Stillwater

Pope, J. M., Perkins
Porter, John H., Glencoe
Potter, Ida, Perkins
Pray, Pearl M., Stillwater
Pursley, E. E., Perry

Ringwald, Grover A., Perkins
Rino, Lelie, Stillwater
Rising, Grace, Glencoe
Ritchey, Belle, Stillwater
Ritchey, Letha, Stillwater
Rogers, E. P., Glencoe

Spaulding, Merle, Perkins
Springer, Ruby, Stillwater
Stevens, Margarite, Stillwater
Stover, Bessie, Stillwater
Stover, Ida M., Stillwater
Studebaker, Rosa, Stillwater
Swartout, Bessie, Cushing

Tillotson, A. K., Stillwater
Tillotson, Bonnie, Stillwater
Triplett, Cathrine, Stillwater

Unger, Mrs. Nellie M., Stillwater

Whipple, Pauline, Stillwater
White, Lucile, Glencoe
Williams, Charles, Mehan
Williams, Leora, Stillwater
Winslow, Ernest, Guthrie
Wood, E. Lee, Stillwater

Students in Special Dairy Course in Buttermaking

Herrin, C. E., Elk City
Holmes, Earl, Stillwater

Jones, J. W., Kingfisher

Unwin, Charles, Stillwater

Holmes, O. W., Stillwater

Jung, Joe, Cushing

Students in Farmers' Short Course

Abbott, L. A., Stillwater
Abbott, Mrs. L. A., Stillwater
Abbott, Ray, Stillwater
Adams, W. A., Stillwater
Albright, H. G., Perkins
Alexander, E. C., Oklahoma
Allen, L. J., Oklahoma
Allison, David, Stillwater
Allison, John, Stillwater
Anderson, A., Stillwater
Anderson, Manda, Stillwater
Anderson, J. H., Perkins
Andrew, H. E., Stillwater
Aupperle, E. R., Kildare
Aupperle, Mrs. Delphia, Stillwater

Badraun, B. C., Stillwater
Bair, T. M., Eagle City
Baker, C. L. Coyle
Baker, I .E., Cache
Ball, J. F., Shawnee
Barnes, J. H., Stillwater
Barnes, Mrs. Etta, Stillwater
Barnes, R. F., Stillwater
Barnhill, Lewis, Stract
Bartholmew, W. J., Glencoe
Beaver, W. H., Lawton
Bellis, J. R., Stillwater
Bentley, W. D., Tishomingo
Berger, S. B., Stillwater
Berry, T. W., Stillwater
Berry, William, Stillwater
Bieghler, Frank, Stillwater
Bilyeu, Robert I., Stillwater
Bishop, R. H., Cordell
Boone, Ernest, Perkins
Boyington, C. A., Carrier
Bradell, J. R., Chicago, Illinois
Bradwell, W. C., Stillwater
Brandon, J. F., Stillwater
Brandon, Edna, Stillwater
Brandon, Mrs. Olive, Stillwater
Bras, C. E., Stillwater
Brewer, G., Glencoe
Bridenstine, W. E., Perkins
Britton, Walter V., Shawnee
Brock, W. B., Lexington, Kentucky
Brown, J. B., Stillwater
Brown, Jim, Stillwater
Brubaker, J. W., Cordell
Bruner, George W., Stillwater
Buhntz, H., Shuwalie
Burkett, G. E., Sparks
Burkett, Mrs. Ellen, Stillwater
Burnham, J. H., Stillwater
Burnridge, A. J., Stillwater

Caldwell, C. R., Madill
Carlton, George, Foraker
Carroll, Fred, Newkirk
Caughell, Henry, Kingfisher
Cawood, Thomas, Miller, South Dakota
Chandler, C. S., Stillwater
Chandler, L. A., Stillwater
Chantry, Warren, Perkins
Chivington, C. O., Stillwater
Clark, D. M., Stillwater
Clark, J. C., Oklahoma
Clausen, S. J., Stillwater
Clausen, Q. S., Stillwater
Clifton, Mrs. Laura, Perkins
Collett, George W., Edmond
Confrey, V., Ripley
Cook, R. B., Frederick
Correll, O. E., Stillwater
Cory, J. S., Stillwater
Cox, J. H., Stillwater
Cox, Mrs. S. C., Chandler
Cox, S. C., Chandler
Crawford, A. W., Mutual
Cross, S. W., Ripley
Cunningham, W. F., Kingfisher
Currey, Mrs. R. C., Stillwater
Currey, R. C., Stillwater

Davidson, E. W., Stillwater
Davis, R. F., Kansas City, Missouri
De Noya, F. A., Burbank
Dent, J. P., Stillwater
Devault, H. J., Caldwich, Kansas
Dickson, G. F., Oklahoma
Dish, J. E., Manhattan, Kansas
Donart, Charles, Stillwater
Doty, S. H., Glencoe
Dougan, F. E., Pawnee
Drumm, E. L., Stillwater
Duck, C. B., Stillwater
Duck, E. W., Stillwater
Duck, Harry, Stillwater
Duck, R. A., Stillwater
Dunavan, L. M., Stillwater
Dunavan, Mrs. L. M., Stillwater
Dunavan, G. W., Lexington, Kentucky
Duncan, Pearl, Lecompton, Kansas

Easton, N. B., Stillwater
Edmondson, H. M., Orlando
Emery, A. J., Oklahoma
Erickson, E. G., Stillwater

Ewing, M., St. Paul, Minnesota
Emerson, H., Enid

Fallin, J. W., Mulhall
Fell, G. A., Cherokee
Felton, E. C., Stillwater
Ferguson, F. F., Minco
Ferguson, G. L., Yale
Ferguson, John, Stillwater
Ferguson, W. A., Yale
Fields, John, Oklahoma
Fisk, W. A., Pryor Creek

Gallant, L. A., Stillwater
Gallant, Mrs. L. A., Stillwater
Gallant, Mrs. H. E., Stillwater
Gammie, James, Pond Creek
Garbe, Erich, Stillwater
Garbe, Wesley, Stillwater
Garee, C. E., Noble
Garrison, Ethel, Pond Creek
Garrison, William, Pond Creek
Gelmais, J. H., Newkirk
George H. C., Stillwater

Hampton, J. Y., Dale
Hampton, L. A., Dale
Harlant, J. C., Stillwater
Hastings, John I., Stillwater
Haughy, A. E., Columbia
Hayes, P. W., Stillwater
Heizer, J., Deer Creek
Hemphill, J. S., Stillwater
Hendricks, Frank, Wakita
Hendricks, John, Wakita
Herthorn, A. J., Oklahoma
Herren, C. E., Elk City
Hess, H. P., Stillwater
Hewitt, E. L., Stillwater
Hewitt, Paul, Coyle
Hiatt, W. C., Vinco
Hickman, E. B., Orlando
Hickman, E. U., Burbank
Hiet, A. M., Stillwater
Hillerman, B. A., Stillwater
Hillerman, Bert, Stillwater
Hillerman, J. A., Stillwater

Jackson, J. H., Enid
Jacobs, John, Stillwater
Janeway, W. D., Stillwater
Jeffords, Mrs. T. M., Elgin
Jeffords, T. M., Elgin
Johns, J. H., Stillwater
Johnson, H. R., Blackwell
Jones, A. H,. Stillwater

Kester, H. J., Enid
Kester, Mrs. H. J., Enid
Kimball, J. C., Chicago, Ill.

Etheridge, M., Stillwater
Evans, A., Stillwater

Flanagan, John, Stillwater
Flesner, Gerd, Stillwater
Flesner, Henry, Stillwater
Ford, A. E., Carrier
Forgey, Henry, Stillwater
Freiday, F. A., Stillwater
Fry, R. D., Watonga
Fulton, A. F., Perkins

George, J. M., Burbank
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Gilges, L., Stillwater
Gill, Mrs. L. C., Stillwater
Goode, P. R., Mangum
Gray, Emil, Roosevelt
Gray, Valley, Roosevelt
Greiner, P. P., Stillwater
Guffey, W. A., Dale
Guthrie, W. S., Oklahoma

Hillerman, John, Stillwater
Hillerman, J. R., Stillwater
Hillmuth, E. A., Lindsay
Hines, Charles, Stillwater
Hines, S. M., Stillwater
Hinkles, W. H., Stillwater
Hoke, Mrs. J. P., Quay
Holman, Chas. W., Dallas, Texas
Holstein, J. A., Stillwater
Holt, Mrs. C. E., Stillwater
Holt, Rev. L. H., Stillwater
Holton, L. M., Helena
Holzer, Charles, Stillwater
Holzer, Chris, Stillwater
Horton, Frank, Stillwater
Hoskinson, C. S., Stillwater
Houston, Hugh, Otoe
Hoyo, G. A., Pauls Valley
Howell, J. F., Orlando
Hughes, Marion, Stillwater
Hunt, W. H., Stillwater
Hybergan, H. H., Lindsay

Jones, C. W., Mustang
Jones, J. W., Kingfisher
Jones, L., Stillwater
Jones, Mrs. M. C., Stillwater
Judge, W. H., Perkins
Judkins, J. M., Purcell
Julick, E. H., Stillwater
Jung, Joe, Cushing

Knipe, F. L., Perkins
Knipe, Mrs. F. L., Perkins
Knipe, Mrs. W. A., Perkins

King, Mrs. E. E., Stillwater
Kirkpatrick, C. H., Speermoore
Kirkpatrick, E. W., Lawton
Kohn, Ernest, Morrison

Knotts, Dr. F. R., Stillwater
Kooken, Mrs. Mark, Kingfisher
Kooken, Mark, Kingfisher
Kuntz, Henry, Putnam

Lahman, F. E., Stillwater
Leininger, George, Stillwater
Leininger, P., Stillwater
Lewis, George, Stillwater
Lewis, G. W., Stillwater

Lindsay, Thomas, Isabella
Longe, Henry, Stillwater
Langshaw, Hugh, Stillwater
Lovett, A. E., Enid

Marsh, Harry, Kingfisher
May, Geo. M., Carrier
Meeks, J. W., Stillwater
Menefu, J. C., Stillwater
Meyerkirk, Cort, Pawnee
Miller, C. H., Stillwater
Miller, D. L., Perkins
Miller, Warden, Stillwater
Miller, Wendell, Westerville
Monroe, George, Wichita, Kans.
Montgomery, A. J., Foraker
Moore, D. E., Stillwater
Moore, William R., Stillwater
Moore, W. S., Buchanan, N. Mex.
Morgan, T. H., Stillwater

Morgan, W. E., Cushing
Morris, A., Stillwater
Morris, J. W., Stillwater
Maume, G. T., Wichita
Moyer, William, Deer Creek
Mulkey, C. B., Lamont
McArthur, L. P., Stillwater
McBride, R. J., Stillwater
McCarrol, T. J., Kingfisher
McCreigh, O. J., Guthrie
McLain, John, Stillwater
McMindes, J. S., Eagle City
McNaught, J. C., Kingfisher
McPharland, C. L., Stillwater

Nash, J. C., Fall River, Kans.
Naylor, Harry, Ahpeatone
Neal, W. A., Clarksville, Ia.
Neuman, A. F., Stillwater

Neuman, L. M., Stillwater
Nicholson, J. F., Stillwater
Nissley, J. E., Guthrie
Noble, G. L., Stillwater

Olson, C. C., Perkins
Overton, F. L., Roosevelt
Overton, Mrs. F. L., Roosevelt

Owen, Ellis, Ponca City
Owen, Mrs. McHenry, Bedford, I
Owens, Howard, Mustang,

Painter, G. W., Stillwater
Painter, Sam, Stillwater
Patton, W. I., Stillwater
Paullin, D. C., Newkirk
Paullin, Mrs. D. C., Newkirk
Payne, W. B., Stillwater
Payne, W. H., Orlando
Peebly, R. L., Oklahoma
Phillips, Joe, Otoe

Piburn, J. A., Lamont
Pickard, J. E., Guthrie
Pinkerton, David F., Perry
Plummer, Sam, Stillwater
Pochel, E. F., Stillwater
Potter, J. S., Stillwater
Potter, Thomas, Stillwater
Price, Hayes, Stillwater
Pyce, J. M., Stillwater

Queen, C. M., Casey, Ill.
Queen, Mrs. C. M., Casey, Ill.

Quigley, Hiram, Elgin

Rader, J. M., Glencoe
Rader, L. L., Glencoe
Ragan, Daniel, Cache
Randall, H. A., Guthrie
Randolph, L. W., Orlando
Ratcliff, Charles, Tryon
Reed, E. B., Guthrie
Renst, C. F., McLoud
Rhodes, W. T., Frederick

Rohlinger, Mrs. R. H., Chandler
Rohlinger, R. H., Chandler
Rosella, S., Stillwater
Roy, H. E., Gibbon
Roy, H. S., Gibbon
Roy, I. P., Gibbon,
Roy, J. F., Yukon
Ruby, W. T., Rusk
Rucker, John, Okeene

Rice, A. L., Ringwood
Ridgley, Henry, Cache
Robinson, Thomas A., Guthrie
Rogers, B. L., Glencoe

Sanford, W .W ., Gage
Schein, Otto, Richland
Schlehuber, C. L., Morrison
Schreiber, Mrs. W. E., Stillwater
Schraeder, A., Stillwater
Scoggins, J. G., Perkins
Scott, E. C., Sac City, Ia.
Scott, T. L., Mulhall
Scroggs, J. G., Perkins
Scroggs, W. G., Stillwater
Searcy, M. S., Stillwater
Seeliger, Emilie, Stillwater
Shafer, E. T., Dallas, Texas
Shafer, G. B., Stillwater
Shafer, I. W., Stillwater
Shafer, W. A., Ponca City
Sharp, C. P., Stillwater
Shepherd, P. A., Stillwater
Shinn, R. E., Glencoe
Shumate, S. B., Perkins
Smart, W. T., Stillwater

Talbot, J. P., Stillwater
Talbot, Mrs. J. P., Stillwater
Tardy, E. M., Chandler
Taylor, L. A., Stillwater
Tensfield, F. M., Maramec
Tensfield, F. C., Maramec

Ulery, C. N., Morrison

Vaughey, J. V., Stillwater
Vaughn, Joseph, Shawnee

Wade, E. A., Alva
Wade, Lee, Mehan
Wadley, J. C., Stillwater
Walker, C. C., Glencoe
Walker, W. N., Stillwater
Walker, S. R., Stillwater
Wallace, I. F., El Reno
Watson, C. B., Stillwater
Watson, W. A., Stillwater
Weaver, John, Stillwater
Webb, H., Caw City
Webster, Mrs. J. H., Skedee
Wells, C. C., Kingfisher
Wheaton, J. T., Oklahoma
Whittaker, George M., Washington, D. C.
Wiar, Henry, Stillwater

Younger, J. E., Stillwater

Zalaback, O. R., Kingfisher

Rudisill, J. M., Tecumseh
Russell, Sen. Campbell, Warner
Russell, Mrs. Campbell, Warner

Smith, C. R., Stillwater
Smith, C. T., Mulhall
Smith, Settie E., Waterloo, Ia.
Smith, S. T., Perkins
Spaid, E. M., Carrier
Spaulding, John, North Enid
Spitler, Chester J., Yukon
Springer, F. H., Shawnee
Stacy, John, Stillwater
Stewart, Monroe, Coyle
Stoabs, J. F., Alva
Stovall, G. W., Stillwater
Streeter, Roy, Wakita
Stringer, E. M., Roosevelt
Stringer, Laubrey, Roosevelt
Stringer, Merle, Roosevelt
Stringer, Mrs. E. M., Roosevelt
Stringer, Thomas, Roosevelt
Stucker, W. J., Stillwater
Summers, W. B. Bucklin, Mo.
Swartz, W. L., Stillwater

Thomas, A. M., Tonkawa
Thomas, Woodie H., Ahpeatone
Thompson, George L., Foxholm, N. Dak.
Tidwell, Mrs. J. E., Arkansas City, Kansas
Tucker, Mrs. J. T., Stillwater
Turner, J. C., Lawton

Unwin, C. P., Stillwater

Vitek, A. E., Glencoe

Wikoff, W. W., Stillwater
Wiley, B. B., Perkins
Wiley, Bert, Perkins
Will, Peter, Glencoe
Willman, Ida, Stillwater
Wilman, Herbert, Stillwater
Wilman, J. B., Stillwater
Wilson, Charles, Coyle
Wilson, James A., Tishomingo
Wilson, T. J., Stillwater
Winkjer, Joel G., Manhattan, Kans.
Wolf, A. E., Broken Arrow
Worley, M. A., Stillwater
Wright, F. W., Orlando
Wright, Weaver, Perkins
Wyant, G. A., Shawnee

Attending Cotton Course, 1908

Alexander, J. D., Stillwater
Anderson G. G., Chickasha

Andrain, W. S., Fairland
Andrews, H. E., Stillwater

Beaver, Wm. H., Lawton
Bentley, W. D., Wichita Falls, Tex.
Benton, C. W., Glencoe

Borman, F. A., Topeka, Kans.
Brown, J. J. Lexington
Burctick, C. C., Yale

Case, R. W., Valliant
Cates, H. C., Stillwater
Ceine, J. T., Arkansas City, Kansas
Chase, H. B., Shawnee
Choate, G. W., Indianola

Clausen, Jens, Stillwater
Cox, Ida D., Stillwater
Cox J. H., Stillwater
Croisant, G. W., Coweta

Davis, Ed F., Concordia, Kans.
Donnelly, J. A., Taupa

Dunn, W. K., Shawnee

Elmore, A. B., Stillwater
Emery, A. J., Watonga
Ericson, P. G., Stillwater

Evans, A., Stillwater
Ferguson, F. F., Minco
Frazee, E. A., Lenora

Gross, Luther W., Braman

Griffith, A. P., Stillwater

Hamilton, Hays, La Veta, Colo.
Harris, J. E., Janis
Haun, Jacob, Stillwater
Haun, J. R. N., Norman
Hayes, M. D., Perkins
Hendrickson, C. L., Watonga
Hesser, I. J., Glencoe

Hesser, J. E., Glencoe
Hesser, J. W., Glencoe
Hesser, Mrs. W. M., Glencoe
Hesser, P. C., Glencoe
Hines, Chas. W., Stillwater
Holmes, O. W., Stillwater
House, J. W., Hennessey

Irvin, L. B., Stillwater
Jeffords, T. M., Elgin

Jung, Joe, Cushing

Keeler, J. M., Enid
Kelly, W. T., Stillwater

Kizer, O. B., Jennings

Lovett, A. E., Enid

Mahr, J. C., Shawnee
Maize, Lee, Walter
Marten, E. E., Chandler
Mathews, Mrs. E. A., Oklahoma

McCarrel, T. J., Hennessey
Morgan, T. H., Stillwater
Mozer, F. M., Minco
Murray, W. H., Tishomingo

Nance, G. W., Tecumseh
Nissley, J. E., Guthrie

Noble, G. L., Stillwater

Olin, W. H., Fort Collins, Colo.

Oursler, Henry, Stillwater

Painter, G. W., Stillwater
Porter, J. H., Glencoe

Potts, R. C., Stillwater

Randall, H. A., Guthrie
Roberts, J. E., Enid

Rudwick, A. W., Chicago
Russell, Campbell, Warner

Sjoberg, Axel, Chickasha
Smith, D. D., Orlando
Smith, J. L., Delhi
Smith, W. A., Cordell

Spencer, L., Sallisaw
Stallard, H. H., Snyder
Standley, W. E., Stillwater
Stovall, G. W., Stillwater

Taylor, J. T., Ardmore
Thompson, A. R,. Enid

Tinup, C. E., Kingfisher

Unger E. J., Stillwater

Unwin, C. P., Stillwater

Vandever, W. G., Blackwell
Van Pelt, J., Guthrie

Vinson, A. G., Alva
Von Stein, G. M., Newkirk

Wade, E. A., Alva
Wheaton, J. T., Oklahoma
White, B. D., Washington, D. C.

White, C. C., Carmen
Winkjer J. G., Manhattan, Kans.
Wright, W. D., Oklahoma

Students in Correspondence Course in Agriculture

Adams, James W., Rankin

Albright, Essenia, Mountain View

Barton, Maude, Chickasha
Bower, H. A., Ravia
Brown, Nellie, Shirley

Butler, Della M., Cheyenne
Butler, Walter E., Rankin

Caffee, Sadie, Lovell

Davison Mrs. Lula, Mountain View
Davis, Mrs. Stena A., Omega

Drake, W. D., Buffalo

Fogg, Frank S., Davidson

Foster, Nellie H., Goodwin

Green, Cleveland, Warren

Gronewold, Anna, Calumet

Hall, Eva, Kingfisher

Harnden, F. D., Stillwater

Kimball, Annabelle, Harrington
Kuser Grace, Eldorado

Kysar, Floyd, Durham

Listen, Otto C., Edmond

Lowry, Lloyd R., Duke

McClelland, Bert, Altus
McClelland, James, Kingfisher

McCollum, C. E., Helena
Moore, A. I., Garvin

Newkirk, Mrs. Rosa, Cheyenne

Overton, Rosetta Riverside

Payne, John H., Tecumseh

Peterson, Water, Foss

Reece, S. M., Madison

Rice, John L., Piedmont

Schein, William, Washington
Seaver, D. V., Berlin
Selzer, Chas., Kiel
Simair, Ella M., Pearl

Sowder N. M., Little
Sturgis, Eva, Angora
Summers, Paul, Altus

Virtis, C. W., Mohawk

Wallace, Kate, Olustee
Washburn, C. W., Burwell
Watkins, J. E., Elk City

West, Sam, Eldorado
Word, Lee, Altus

Total enrollment 1414
Enrollment exclusive of students in Special Dairy Course, Farmers' Short Course, Cotton-Grading Course, and Correspondence Course in Agriculture 857

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